

**PROCESSED CSMIP STRONG-MOTION RECORDS FROM
THE NORTHRIDGE, CALIFORNIA EARTHQUAKE
OF JANUARY 17 1994: RELEASE NO. 2**

R. DARRAGH

T. CAO

M. HUANG

A. SHAKAL

Report No. OSMS 94-08

California Strong Motion Instrumentation Program

California Department of Conservation

Division of Mines and Geology

Office of Strong Motion Studies

801 K Street, MS 13-35, Sacramento, California 95814-3531

February 24, 1994

INTRODUCTION

The digitized and processed records obtained from 5 CSMIP stations during the Northridge earthquake of January 17, 1994 are included in this second release. Four of these stations are in Los Angeles and one is north of the epicentral area. They range in distance from 23 to 41 km (epicentral). The stations are:

- Los Angeles - Hollywood Storage Bldg. Grounds Sta. # 24303, 23 km
- Los Angeles - Baldwin Hills Sta. # 24157, 28 km
- Los Angeles - Obregon Park Sta. # 24400, 39 km
- Los Angeles - 116th St. School Sta. # 14403, 41 km
- Castaic - Old Ridge Route Sta. # 24278, 41 km

Strong-motion records were recovered from 193 CSMIP stations following the Northridge earthquake. The accelerograms, information on the earthquake and recording stations are presented in the CSMIP data report on this earthquake (Shakal and others, 1994). The results of digitizing and processing for the first release of 5 records were announced on February 4, 1994 and were included in the first release report (Darragh and others, 1994). Details on accelerogram digitizing and processing will be presented in a forthcoming final CSMIP processed data report.

PLOTS OF PROCESSED DATA

For each ground-response station the plots are numbered in the upper right corner of each page. The first page for each station is given below as:

<u>Page No.</u>	<u>Station Name</u>
4	Los Angeles - Hollywood Storage Bldg. Grounds
13	Los Angeles - Baldwin Hills
22	Los Angeles - Obregon Park
31	Los Angeles - 116th St. School
40	Castaic - Old Ridge Route

The order of the plots for each station is as follows:

1. Phase 1 (Vol. 1) data: Uncorrected accelerations. Acceleration for the first 22 seconds is plotted with a common scaling factor for all channels; three channels are plotted on one page. This plot is followed by a second plot of the full processed length (60 seconds) with each channel individually scaled.
2. Phase 2 (Vol. 2) data: Instrument and baseline-corrected acceleration, velocity and displacement. The data for the full processed length (60 seconds) are plotted with equal scaling for all channels. The filter frequencies determined in the processing are indicated on the plots (see Usable Data Bandwidth).

3. Phase 3 (Vol. 3) data: Response spectra. The pseudo-velocity spectra (PSV), the pseudo-acceleration spectra (PSA), the displacement spectra (SD) and the Fourier amplitude spectra (FS) are presented on a tripartite logarithmic plot for each channel for 0%, 2%, 5%, 10%, and 20% dampings. The spectra are plotted for periods within the Usable Data Bandwidth.
4. Phase 3 (Vol. 3) data: Response spectra. The absolute acceleration spectra (SA) for 0%, 2%, 5%, 10% and 20% dampings are plotted against period with linear-linear scaling from 0 to 4 seconds.

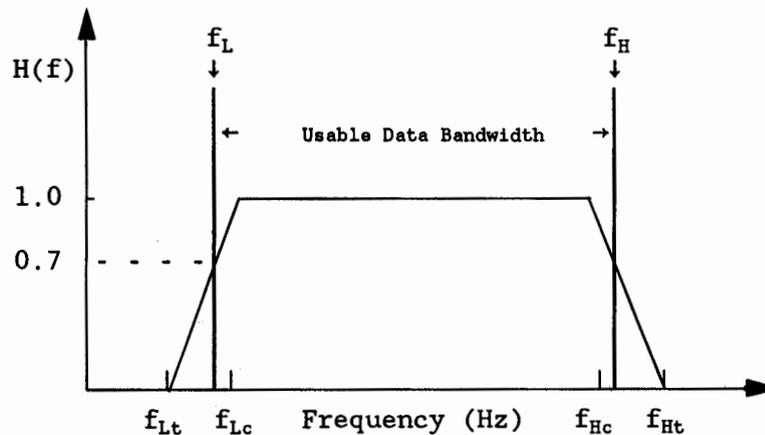
REFERENCES

Darragh, R., T. Cao, C. Cramer, M. Huang and A. Shakal (1994). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 1, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-06B, February 4, 1994, 48 p.

Shakal, A., M. Huang, R. Darragh, T. Cao, R. Sherburne, P. Malhotra, C. Cramer, R. Sydnor, V. Graizer, G. Maldonado, C. Petersen and J. Wampole (1994). CSMIP Strong-Motion Records from the Northridge, California Earthquake of 17 January 1994, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-07, February 18, 1994, 308 p.

DEFINITION OF USABLE DATA BANDWIDTH

The filter bands for each record are indicated on the plots for the Phase 2 and Phase 3 data. In standard processing, the digitized data are processed and filtered using Ormsby filters. The data are first low-pass filtered using a high-frequency filter with a corner frequency of 23 Hz and a roll-off termination frequency of 25 Hz. Then the data are high-pass filtered using a low-frequency filter with a corner frequency of 0.07 Hz and a roll-off termination of 0.05 Hz. Therefore, the Phase 2 data is the result of the digitized data being filtered by the bandpass filter $H(f)$ with ramps as shown in the figure:

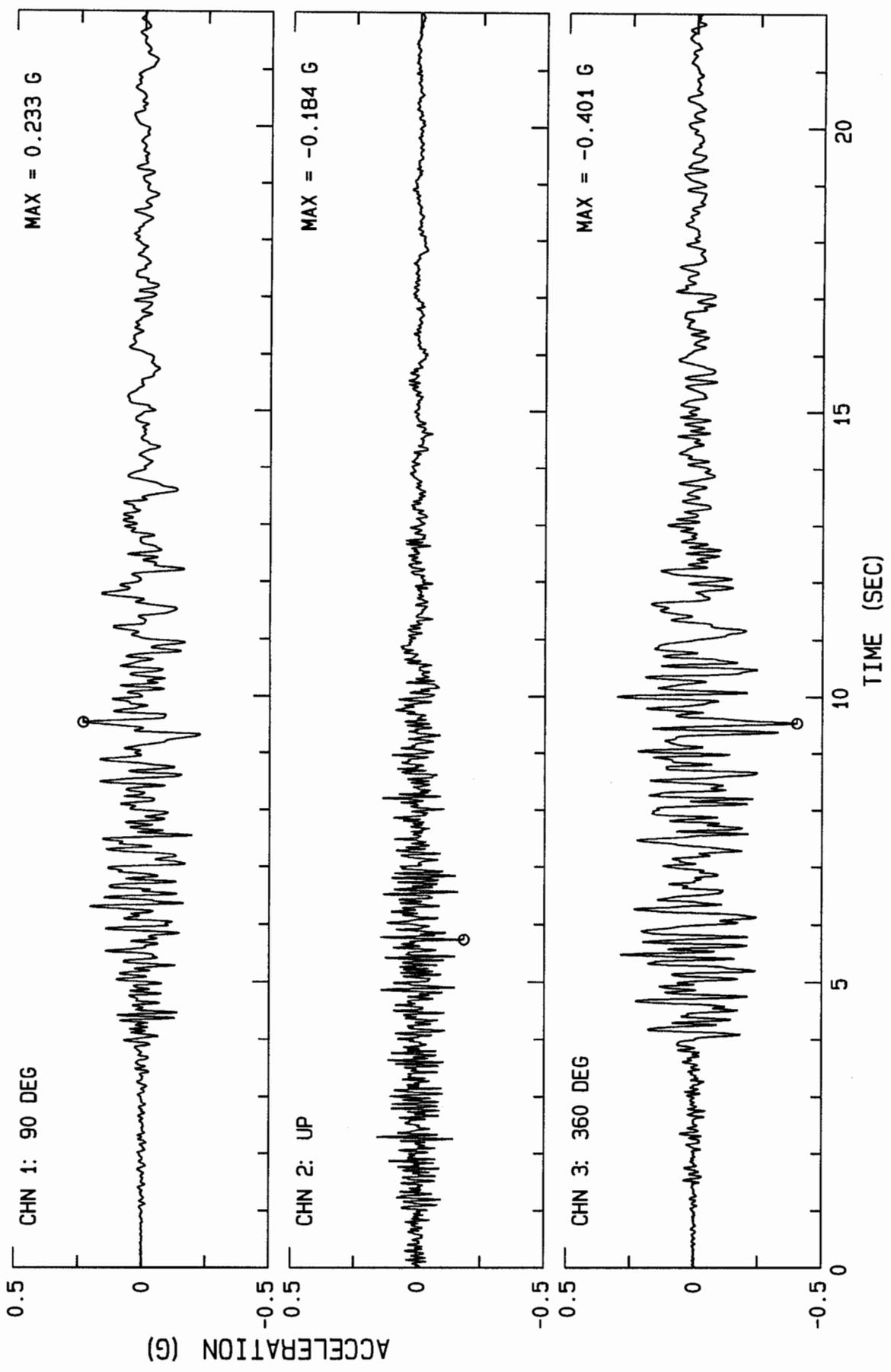


The Usable Data Bandwidth is defined as the band between frequencies f_H and f_L , where f_H and f_L are the -3 dB points on the high-frequency and low-frequency ramps, respectively. The value of $H(f)$ is approximately equal to 0.7 for -3 dB (see Notes). The user should only use these data for analyses within this bandwidth.

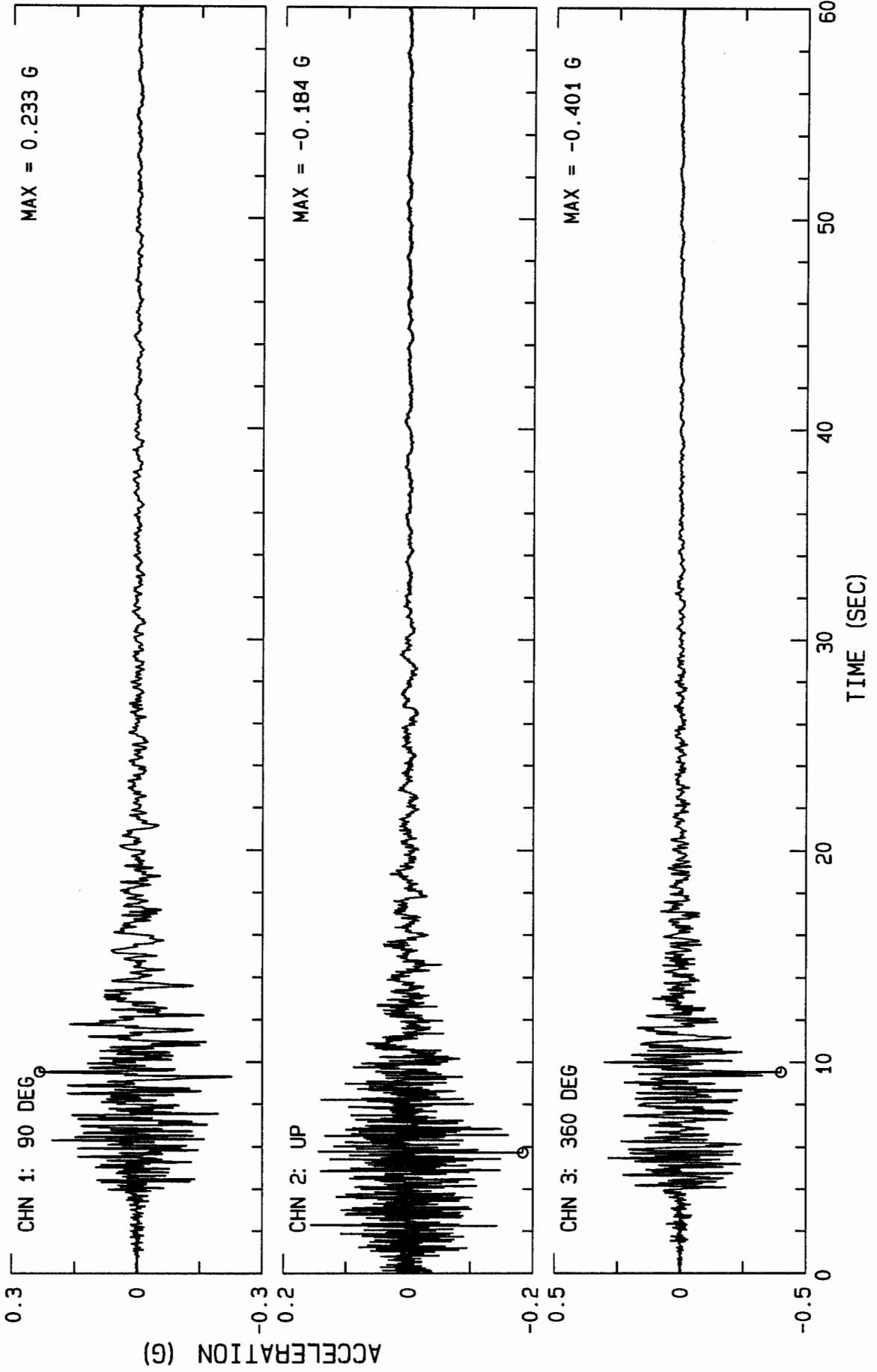
Notes:

- 1) The values of f_H and f_L can be calculated from the corner frequencies (f_{Hc} , f_{Lc}) and the roll-off termination frequencies (f_{Ht} , f_{Lt}) used in the processing by using the formulas $f_H = f_{Hc} + 0.3 * (f_{Ht} - f_{Hc})$ and $f_L = f_{Lc} - 0.3 * (f_{Lc} - f_{Lt})$. For example, the Usable Data Bandwidth for data bandpass-filtered with ramps at 0.30 to 0.60 Hz and 23.0 to 25.0 Hz is 0.51 Hz to 23.6 Hz (0.042 to 2.0 seconds period).
- 2) It is common in signal processing to plot $20 \log_{10}[H(f)]$ versus frequency, and express the ordinate value in decibels (abbreviated dB). Accordingly, 0 dB corresponds to a value of $H(f)$ equal to 1; 20 dB is equivalent to $H(f) = 10$, and -20 dB corresponds to $H(f) = 0.1$. Thus, at the -3 dB frequency point, the amplitude of the transfer function, $H(f)$ is reduced to 0.7, while the power transmitted by the filter, $H^2(f)$, is reduced to 0.5.

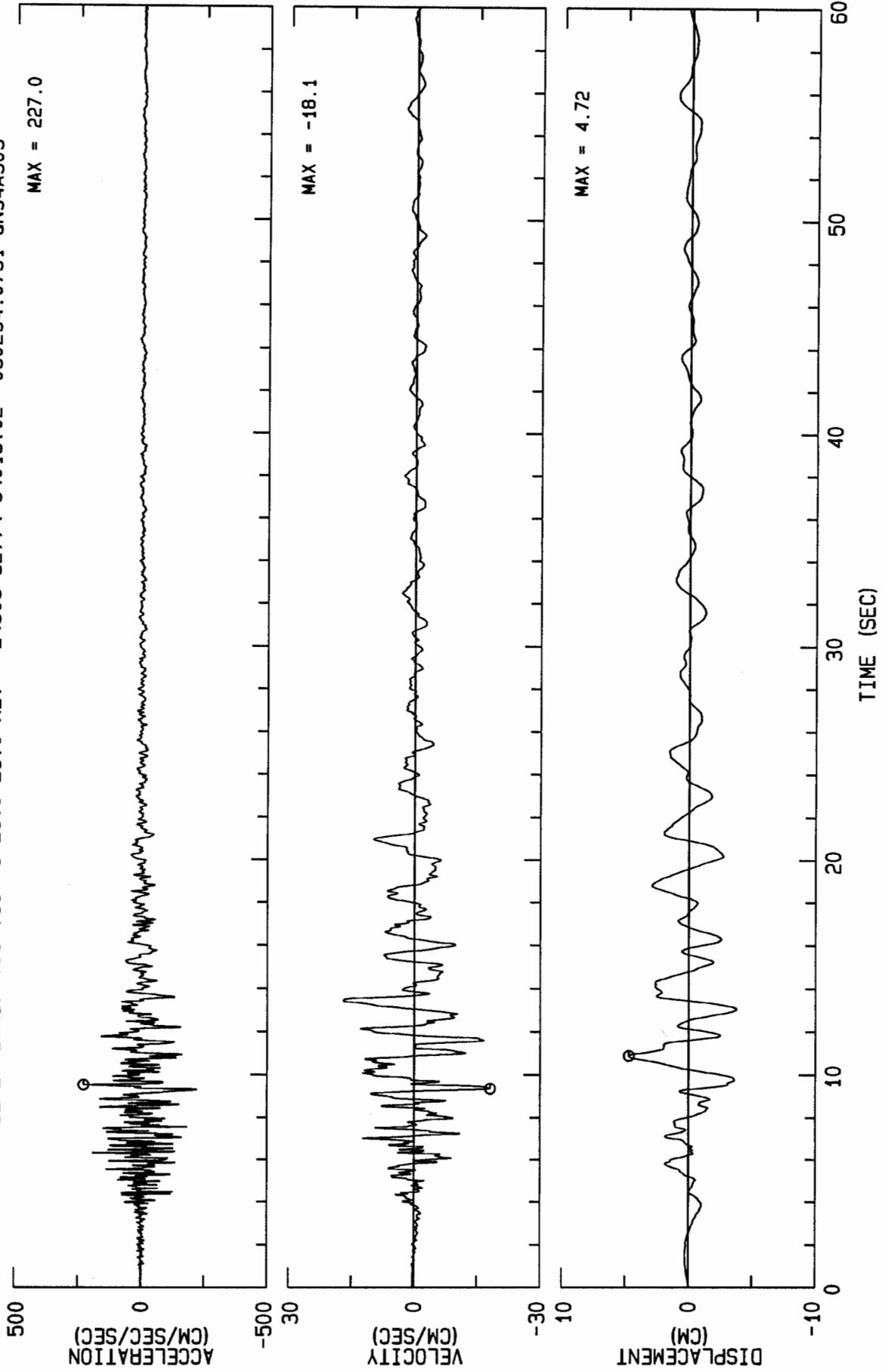
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - HOLLYWOOD STORAGE GROUNDS
UNCORRECTED ACCELEROGRAM 24303-S2774-94018.02 030294.0729-QN94A303



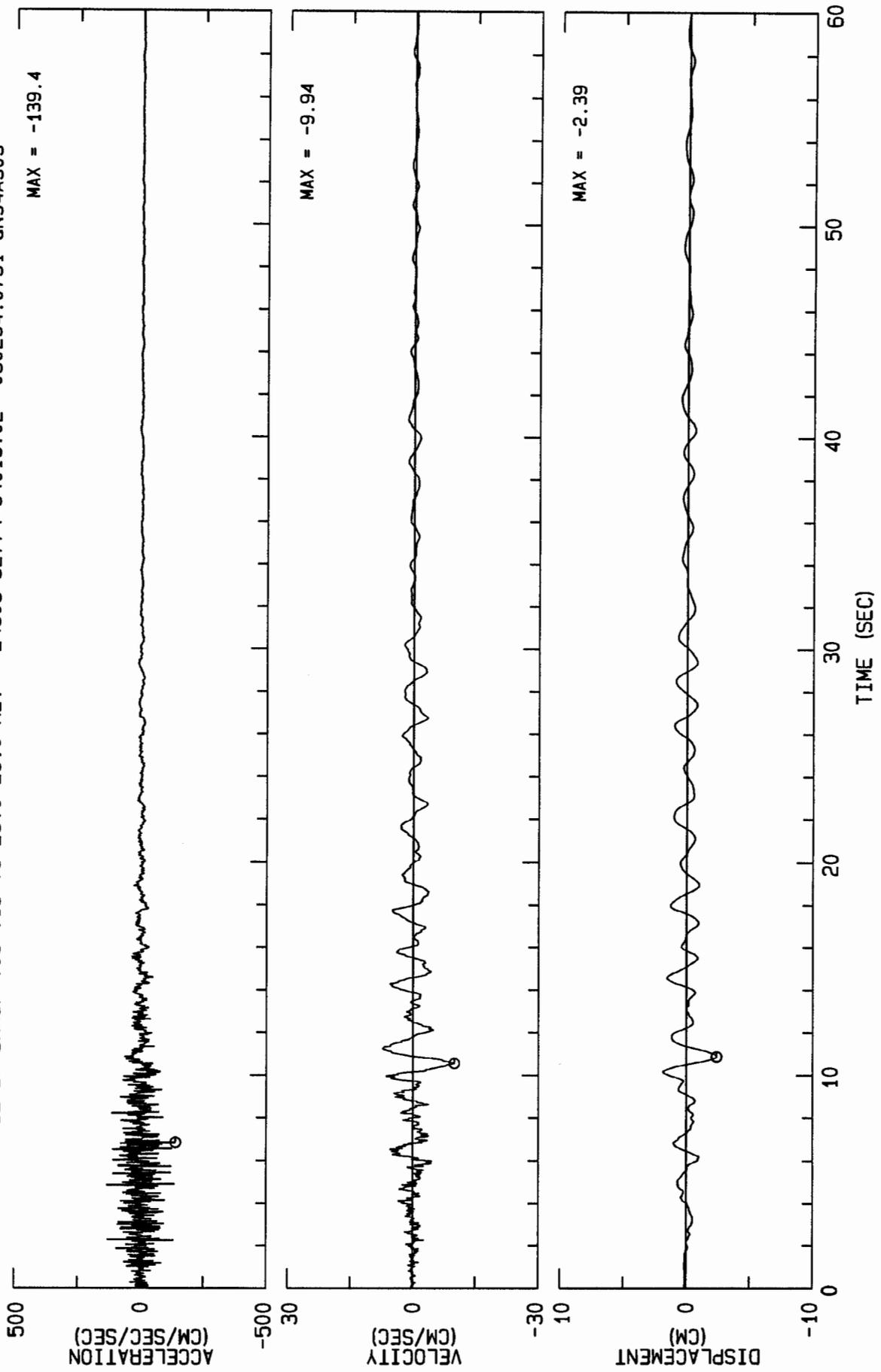
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - HOLLYWOOD STORAGE GROUNDS
UNCORRECTED ACCELEROGRAM 24303-S2774-94018.02 030294.0729-QN94A303



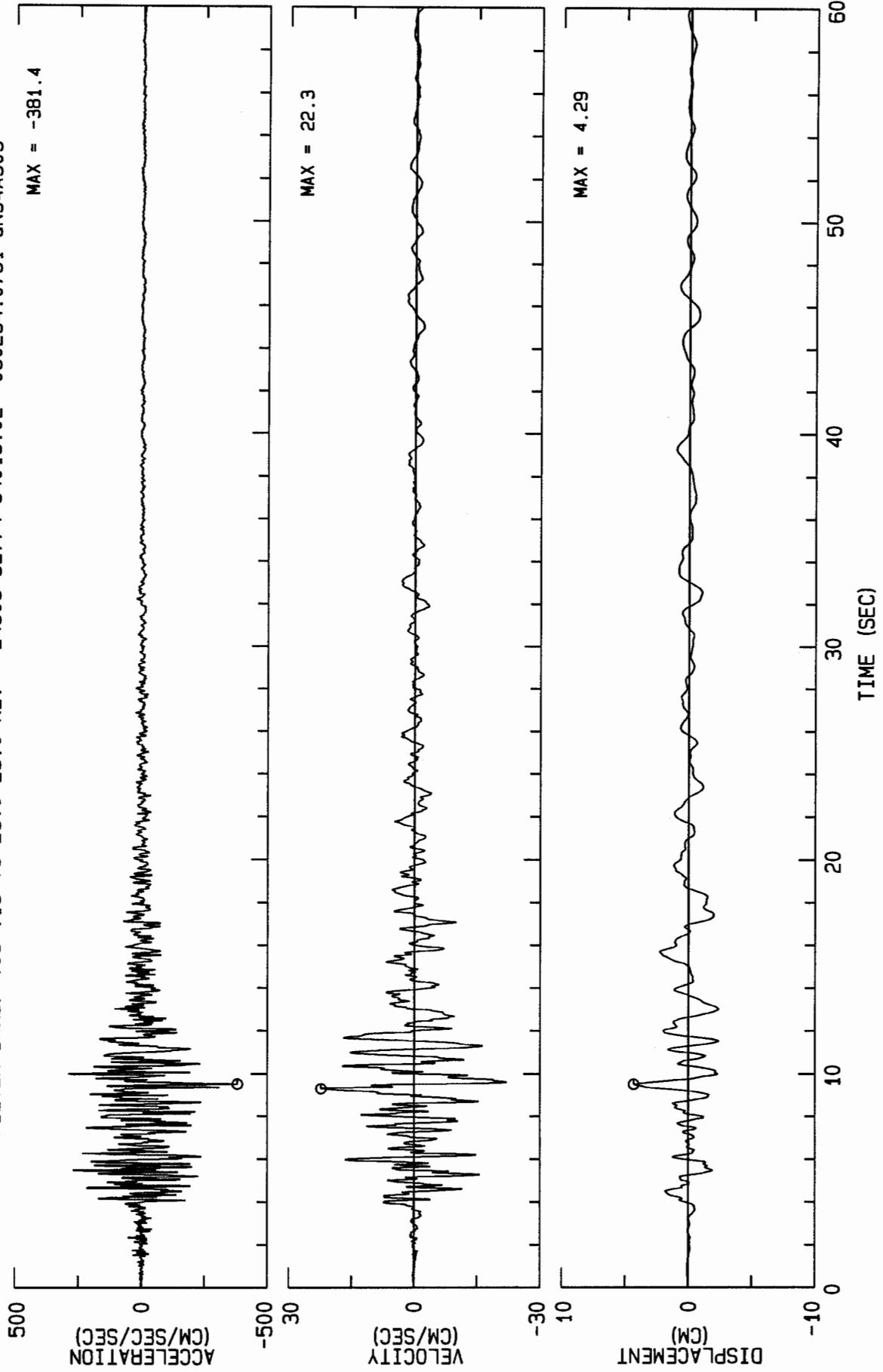
NORTHRIE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - HOLLYWOOD STORAGE GROUNDS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24303-S2774-94018.02 030294.0731-QN94A303



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - HOLLYWOOD STORAGE GROUNDS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24303-S2774-94018.02 030294.0731-GN94A303



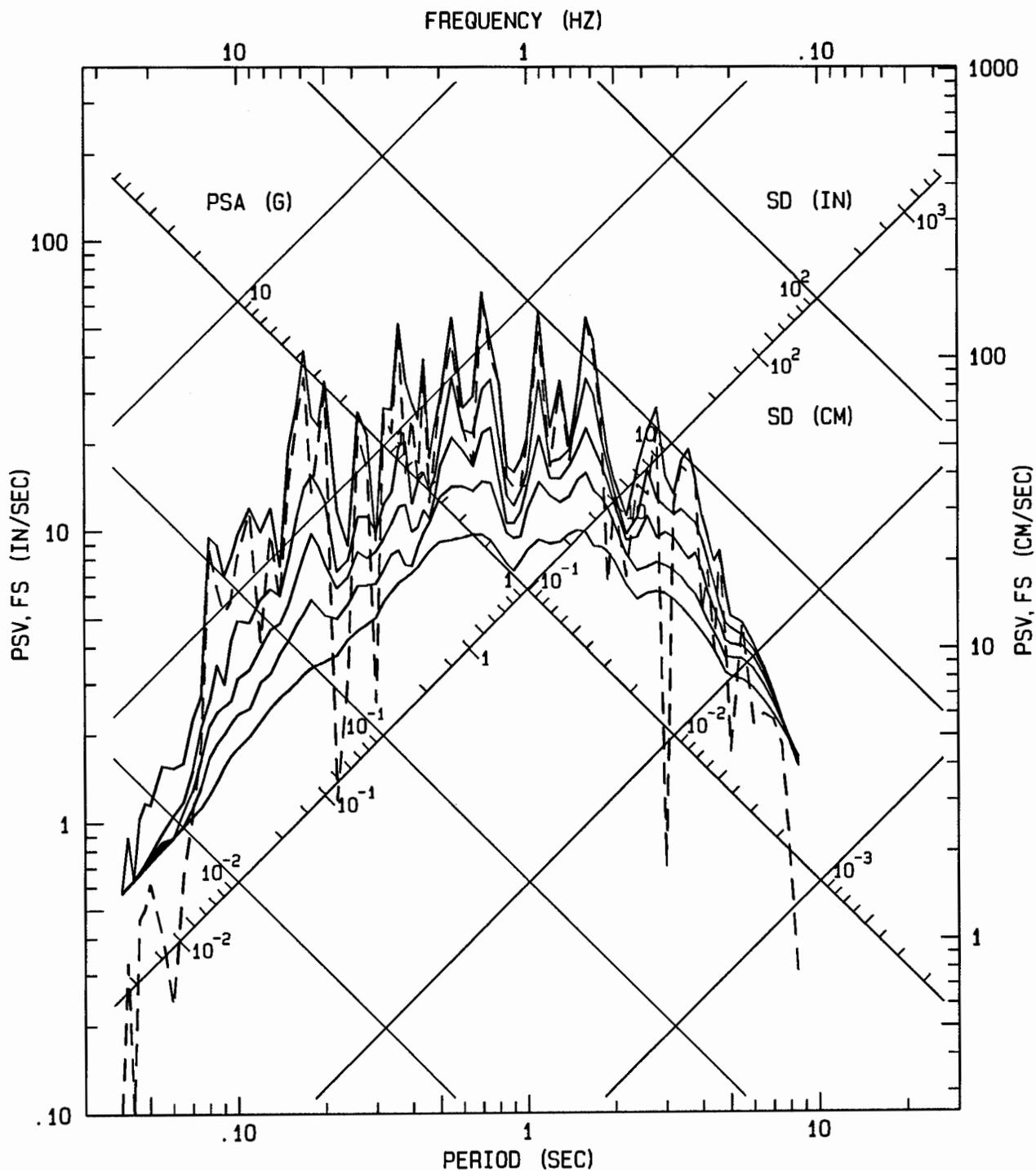
NORTHRIAGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - HOLLYWOOD STORAGE GROUNDS CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24303-S2774-94018.02 030294.0731-QN94A303



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
 LOS ANGELES - HOLLYWOOD STORAGE GROUNDS
 CHN 1: 90 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24303-S2774-94018.02 030294.0733-QN94A303

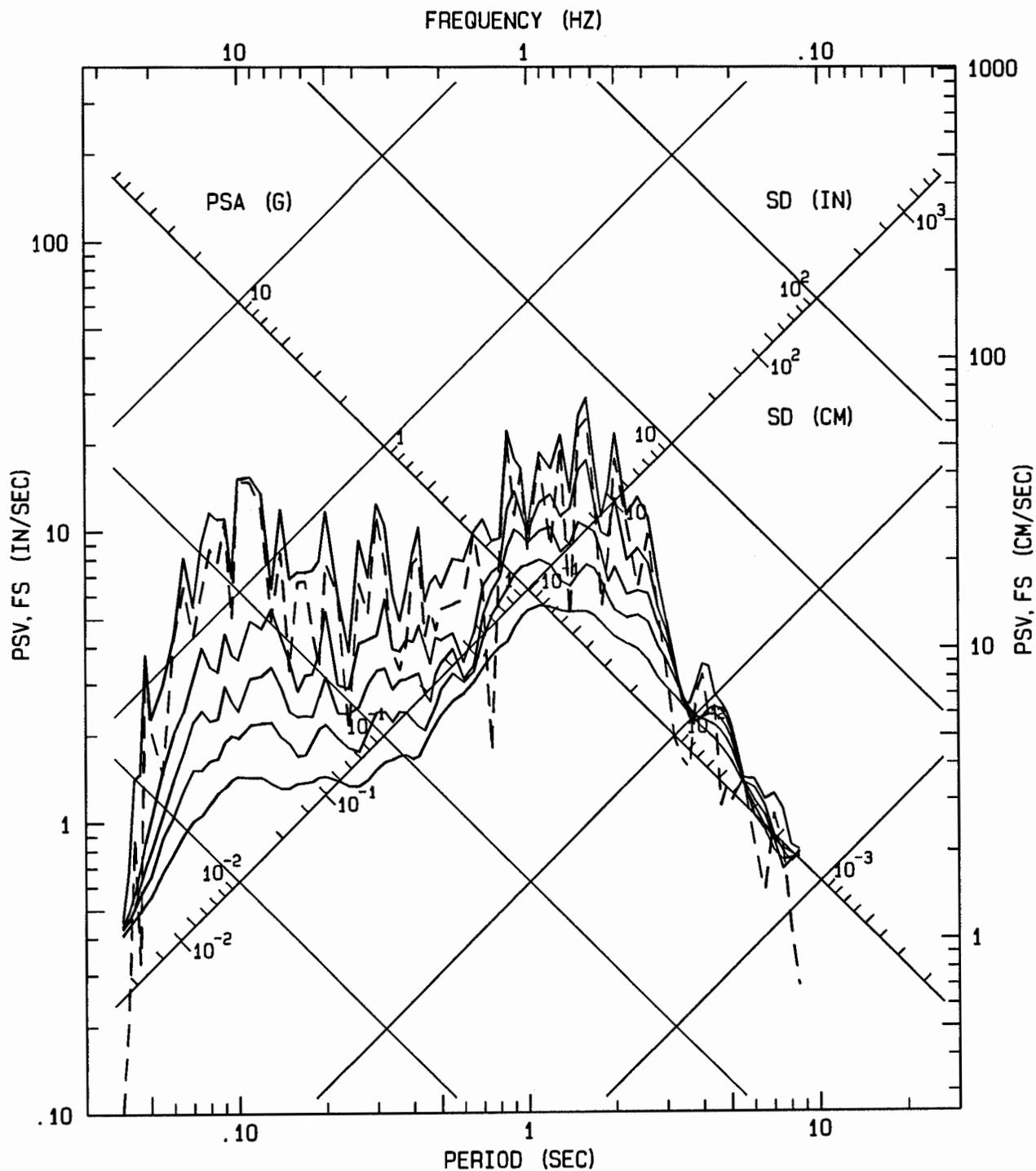
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - HOLLYWOOD STORAGE GROUNDS
 CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24303-S2774-94018.02 030294.0733-QN94A303

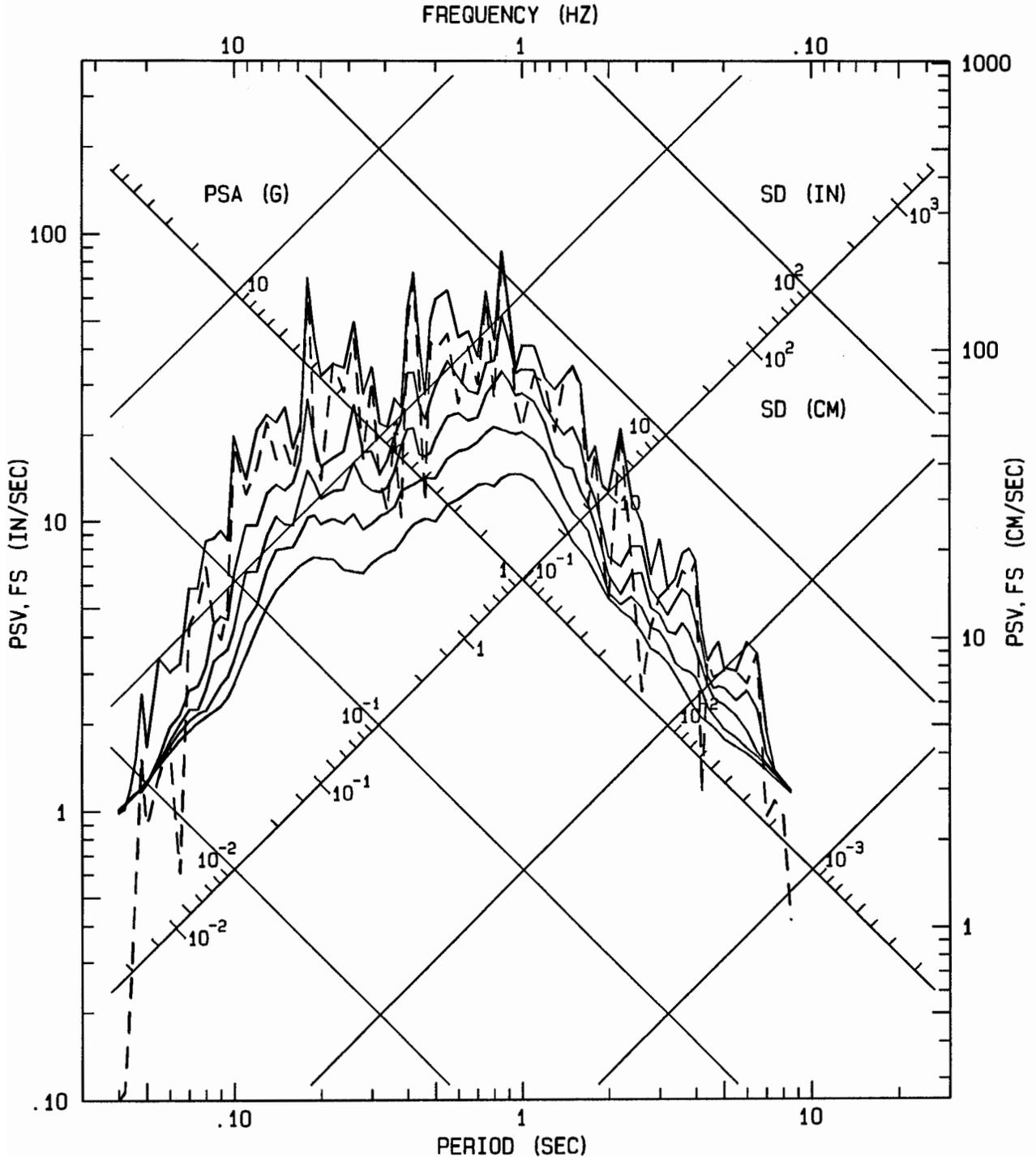
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



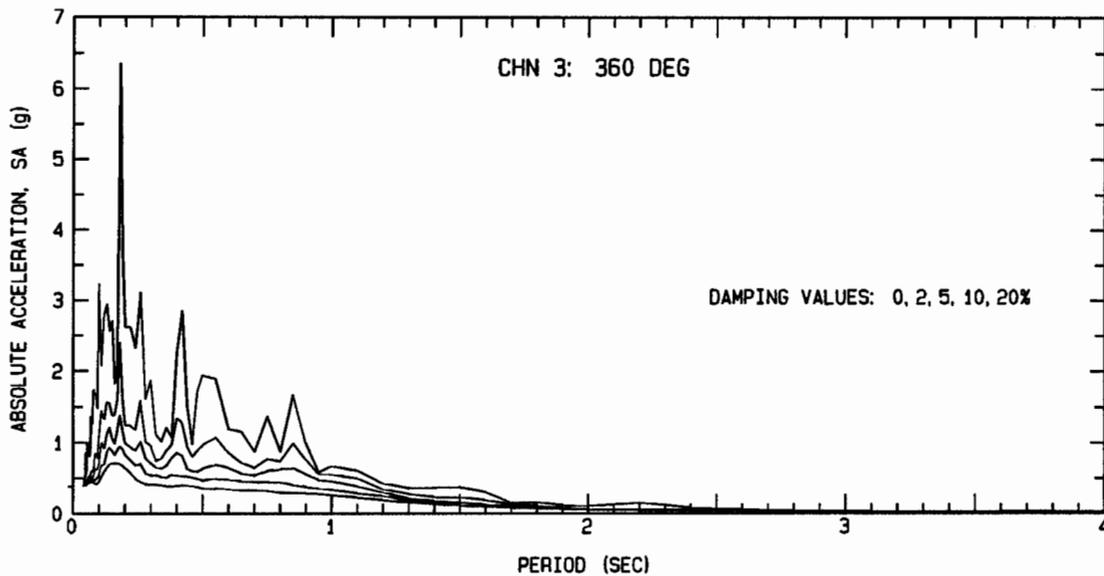
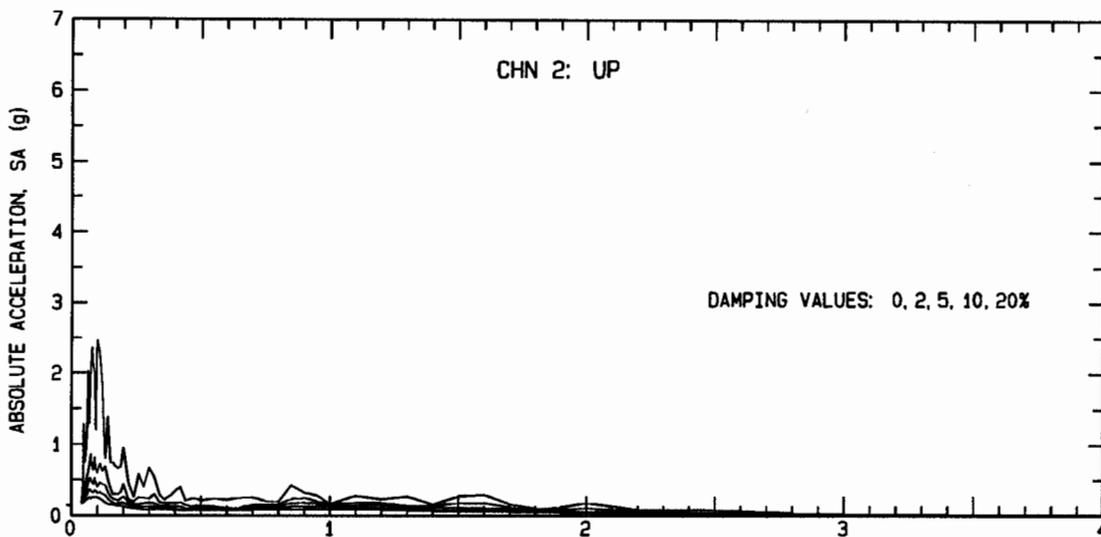
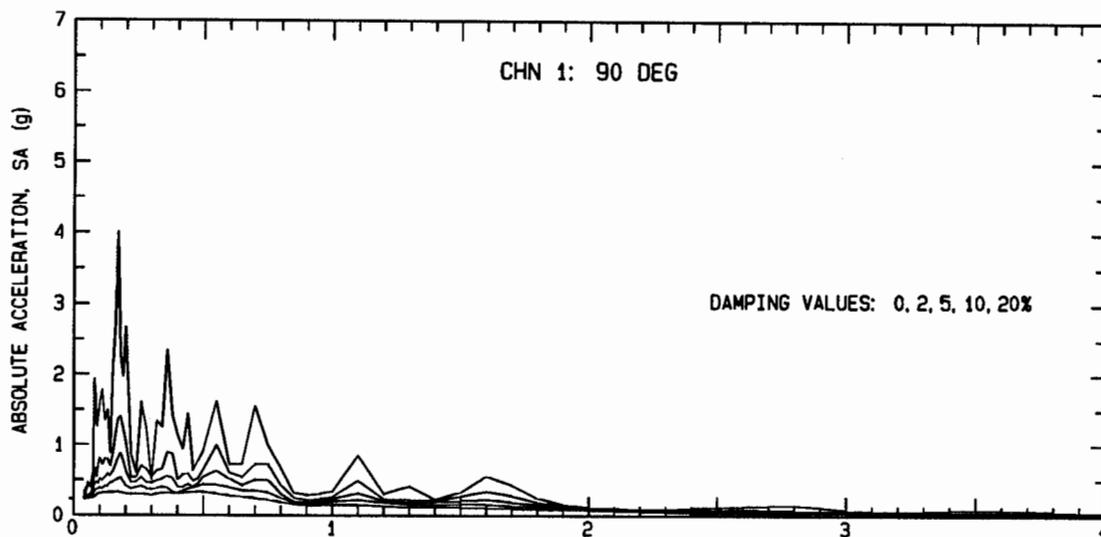
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - HOLLYWOOD STORAGE GROUNDS
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24303-S2774-94018.02 030294.0733-GN94A303

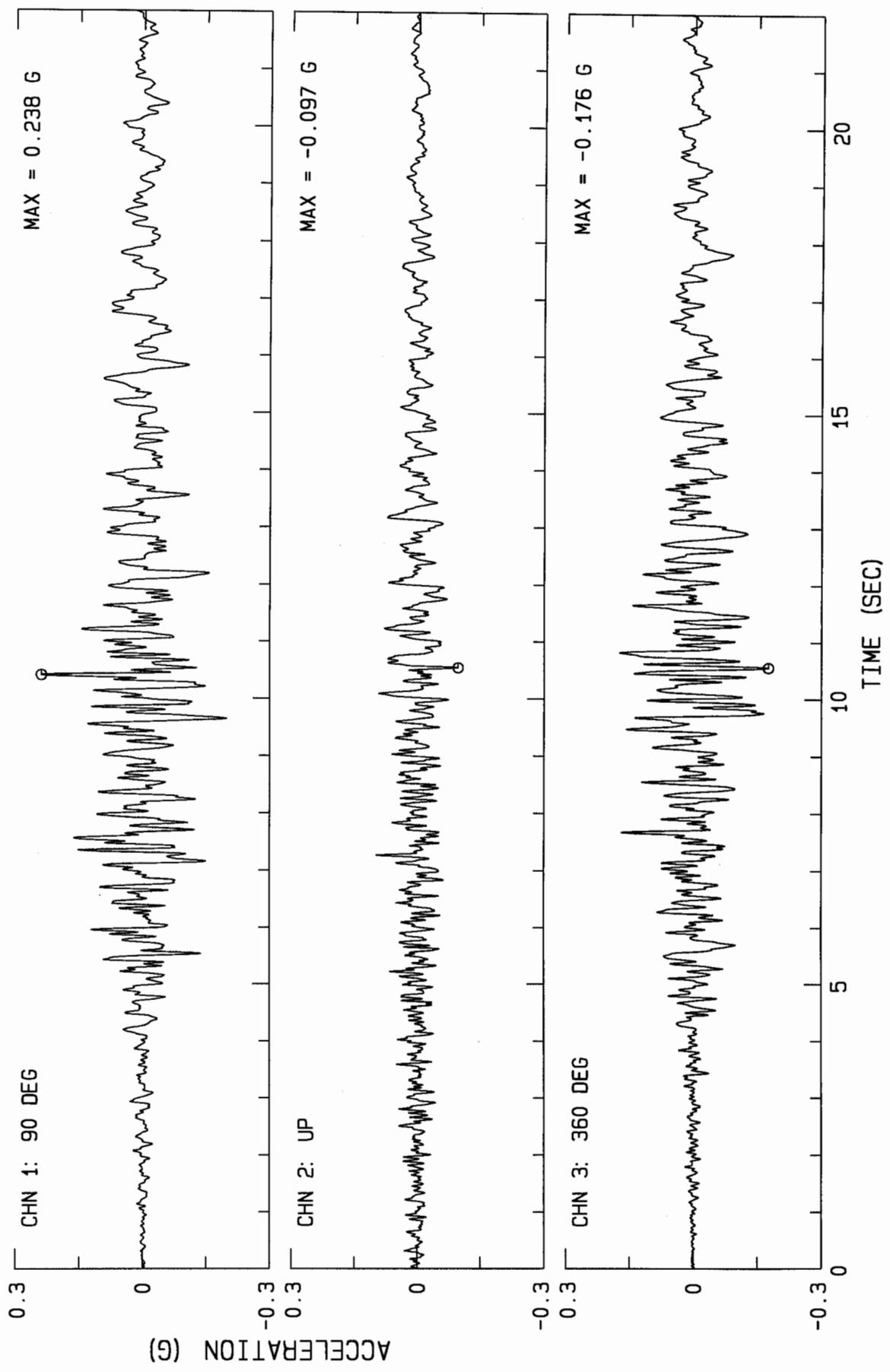
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



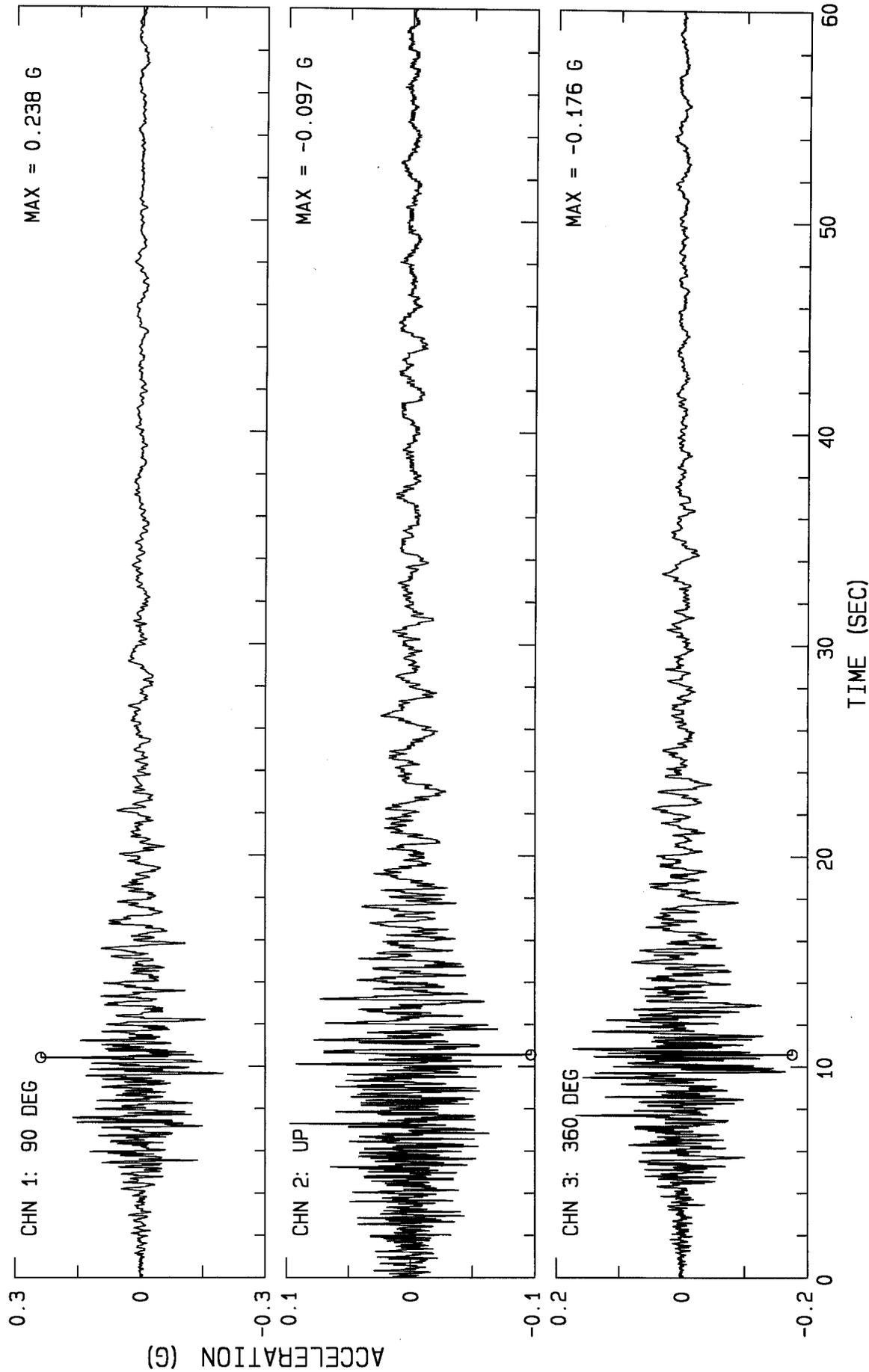
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - HOLLYWOOD STORAGE GROUNDS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
24303-S2774-94018.02 030294.0733-QN94A303



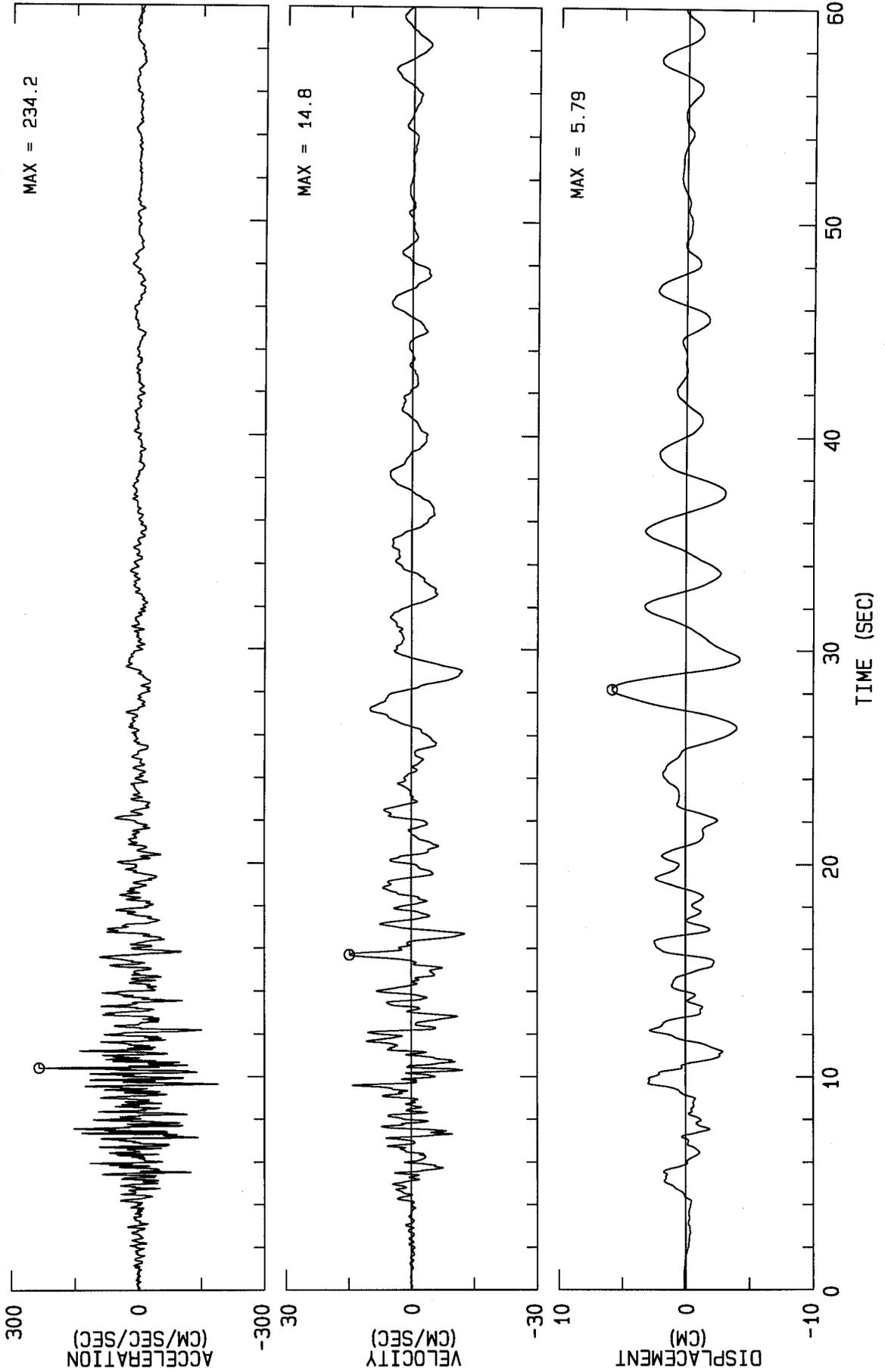
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - BALDWIN HILLS
UNCORRECTED ACCELEROGRAM 24157-S1687-94019.02 020794.1118-QN94A157



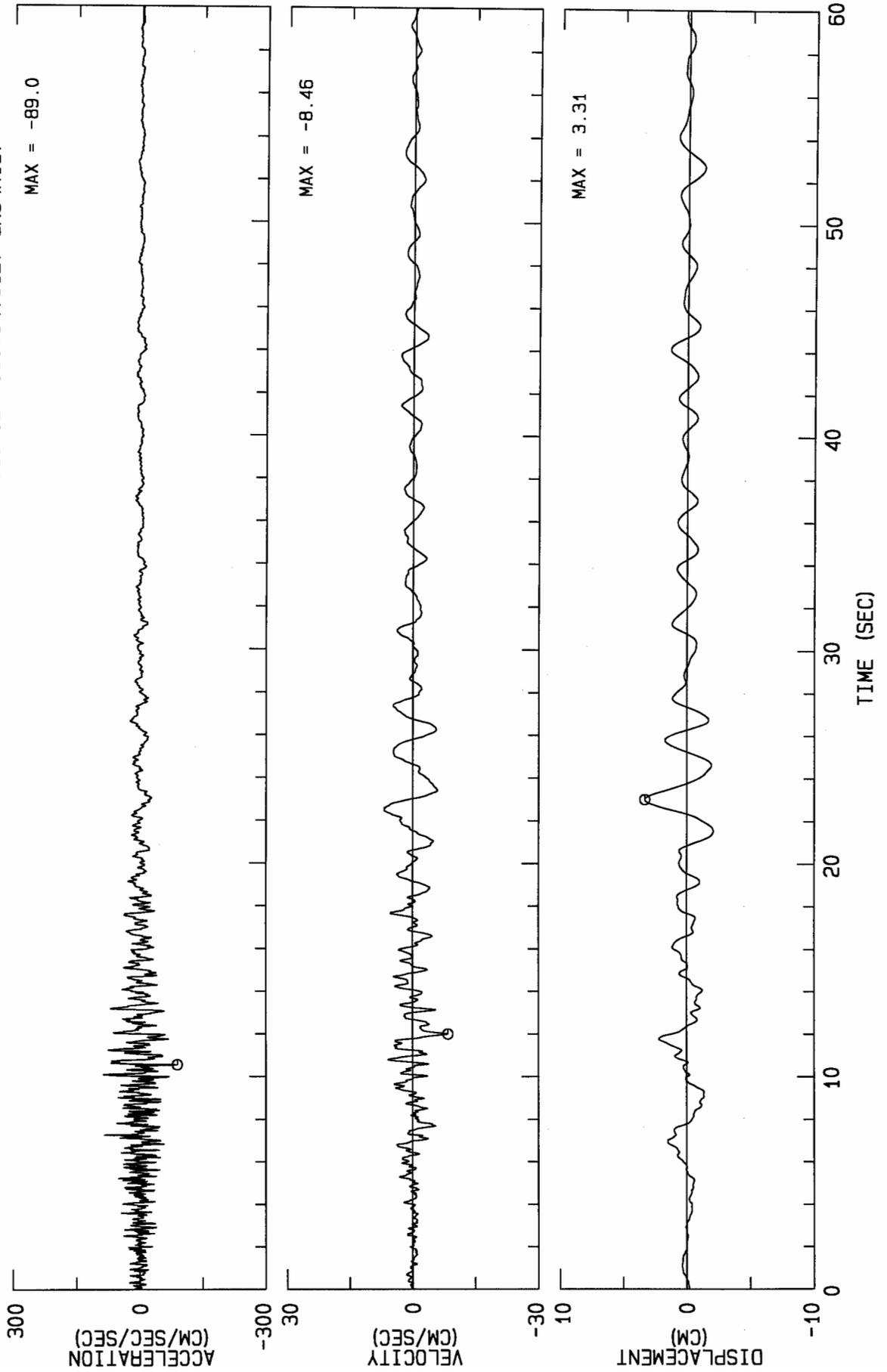
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - BALDWIN HILLS
UNCORRECTED ACCELEROGRAM 24157-S1687-94019.02 020794.1118-QN94A157



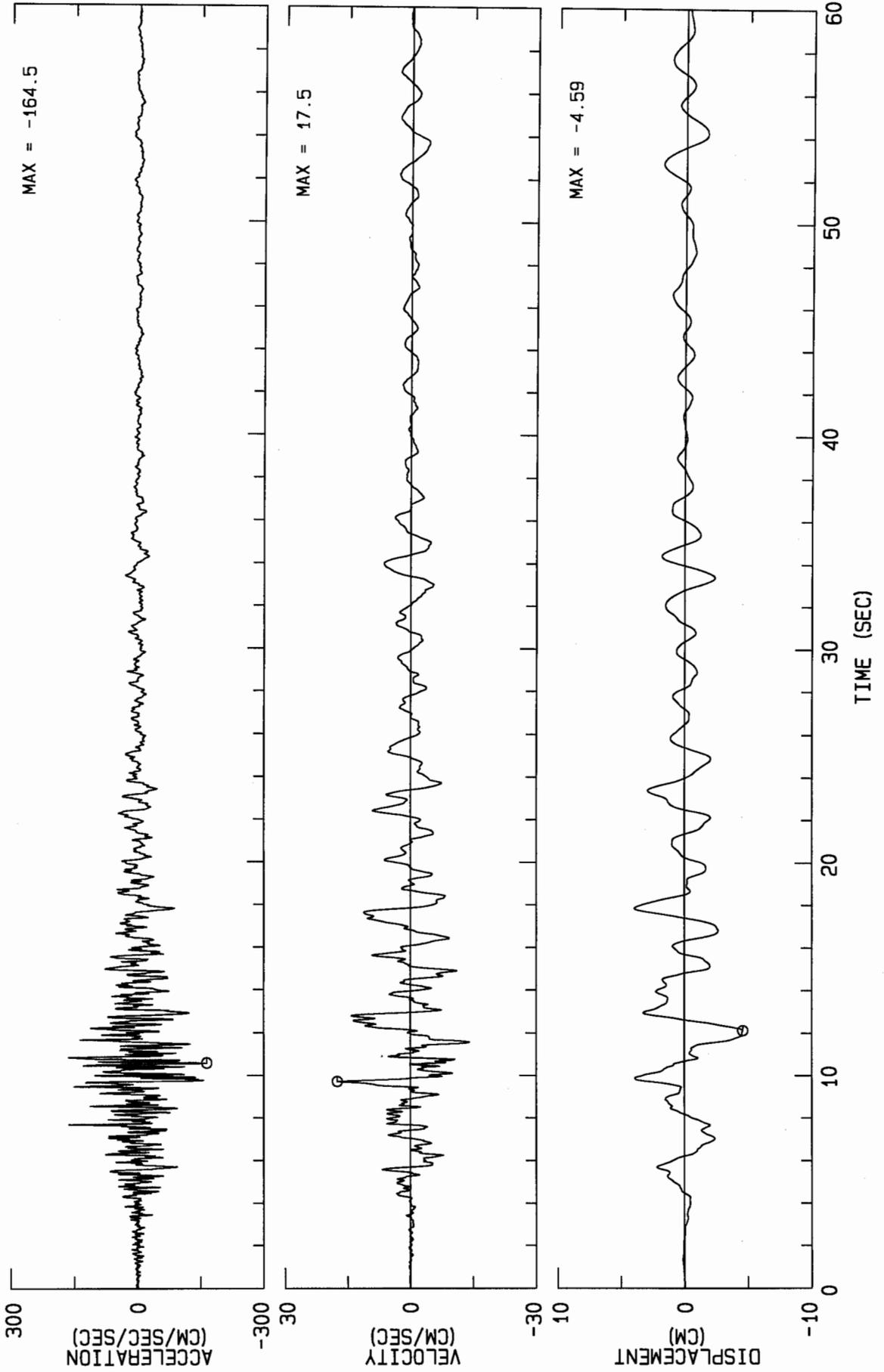
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - BALDWIN HILLS CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24157-S1687-94019.02 020794.1127-QN94A157



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - BALDWIN HILLS CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24157-S1687-94019.02 020794.1127-QN94A157



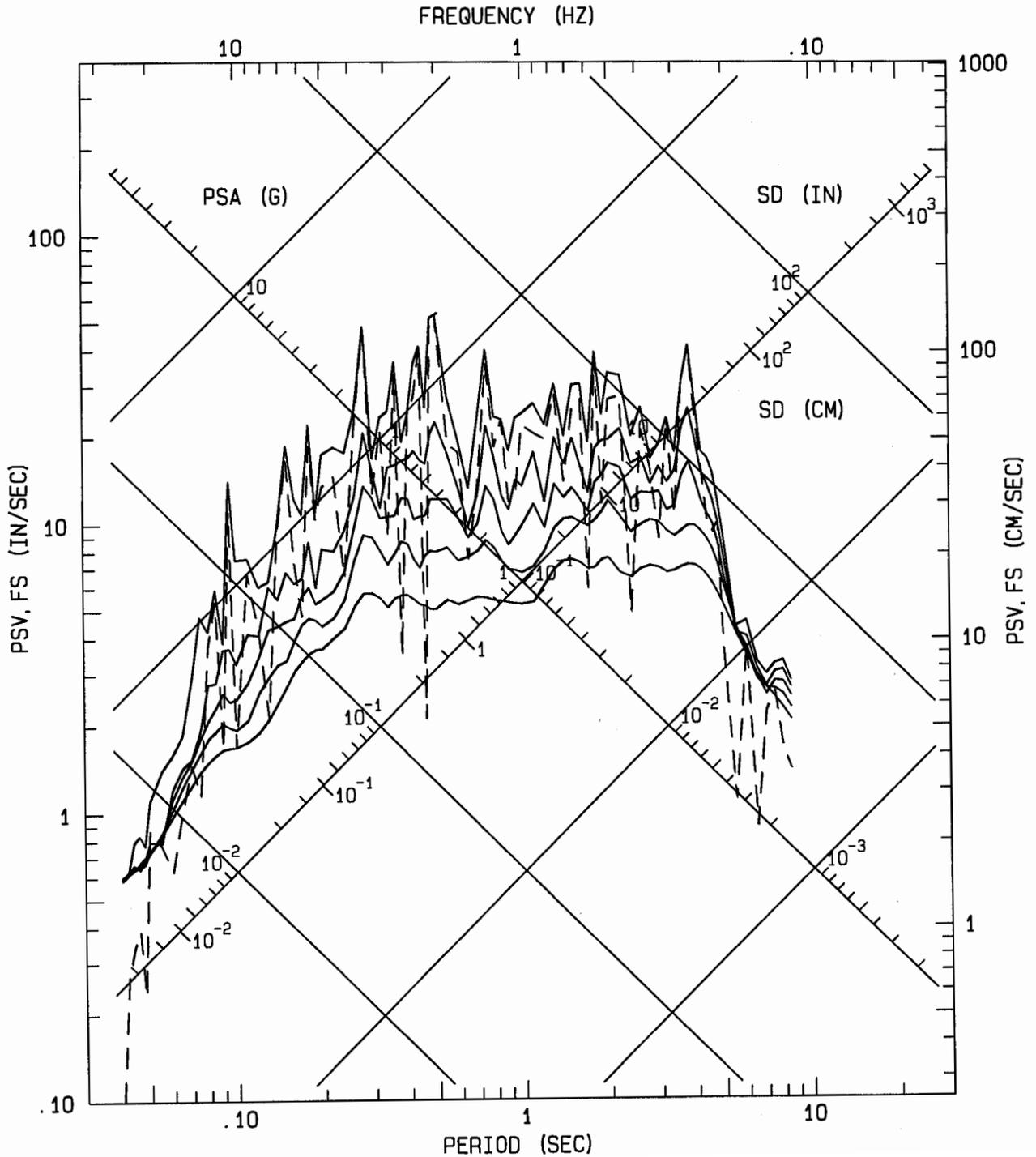
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - BALDWIN HILLS CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24157-S1687-94019.02 020794.1127-QN94A157



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - BALDWIN HILLS
 CHN 1: 90 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24157-S1687-94019.02 030294.0717-QN94A157

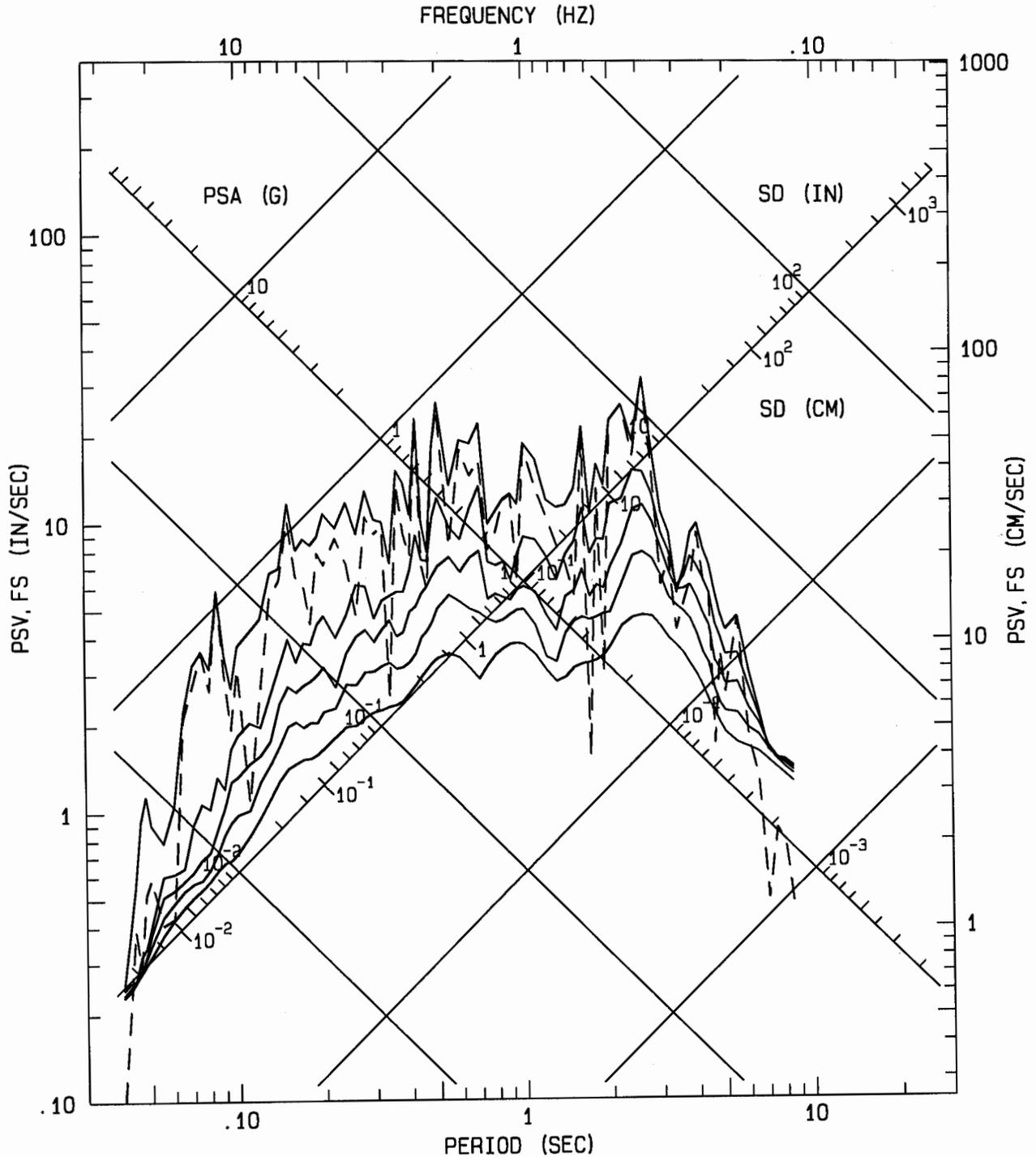
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
 LOS ANGELES - BALDWIN HILLS
 CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24157-S1687-94019.02 030294.0717-QN94A157

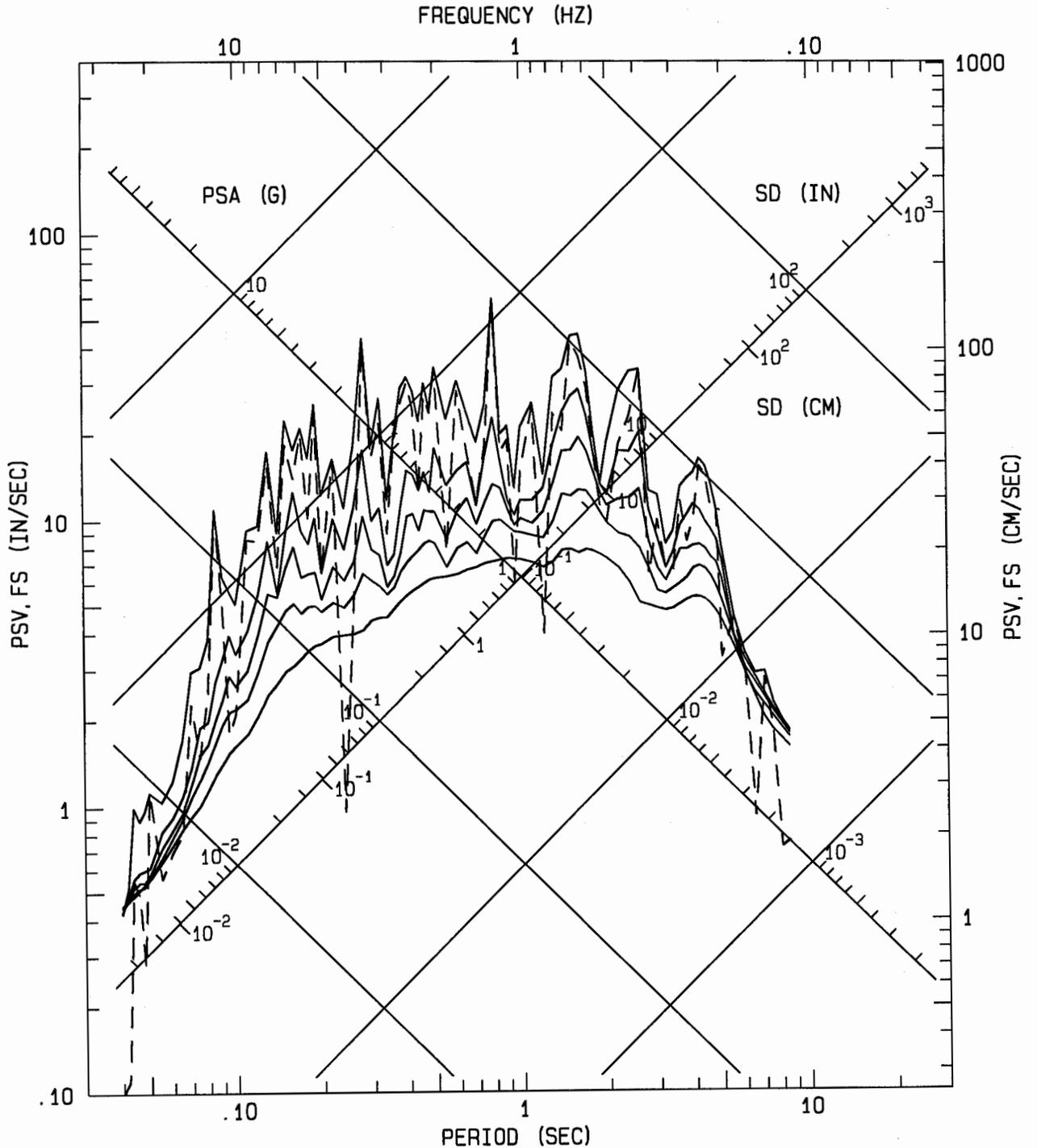
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



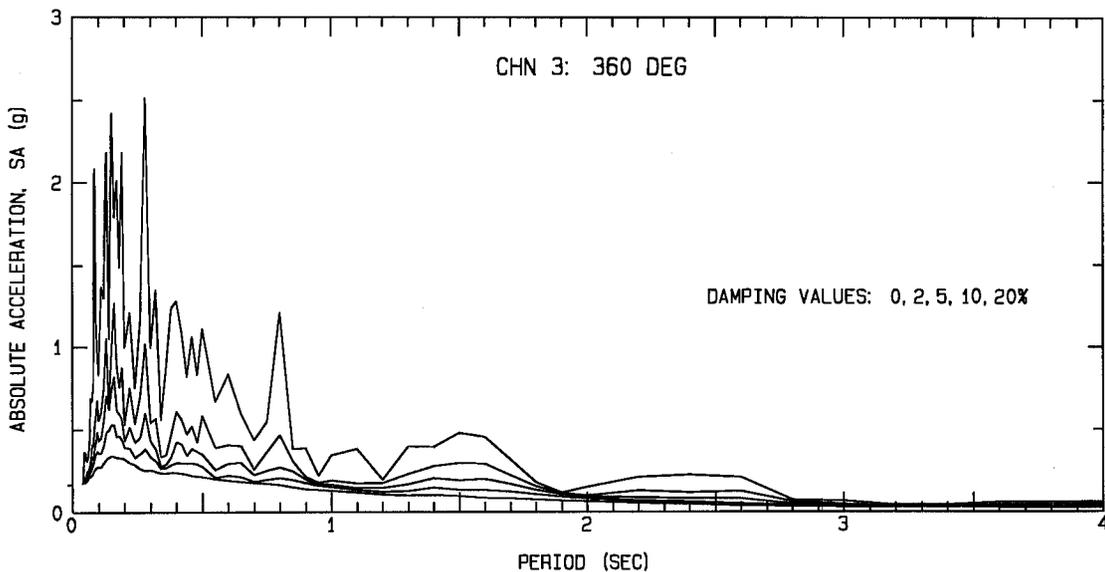
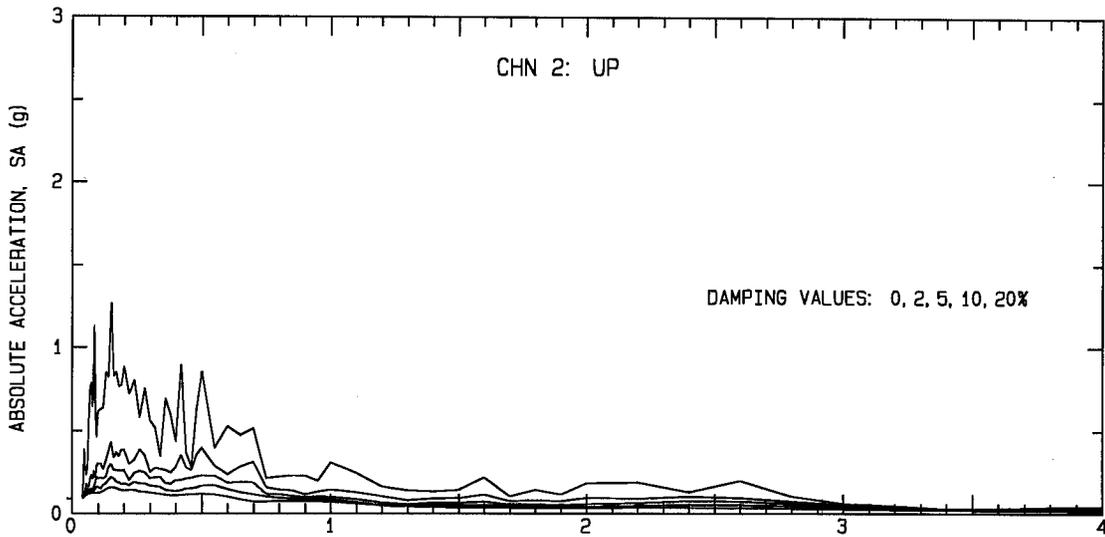
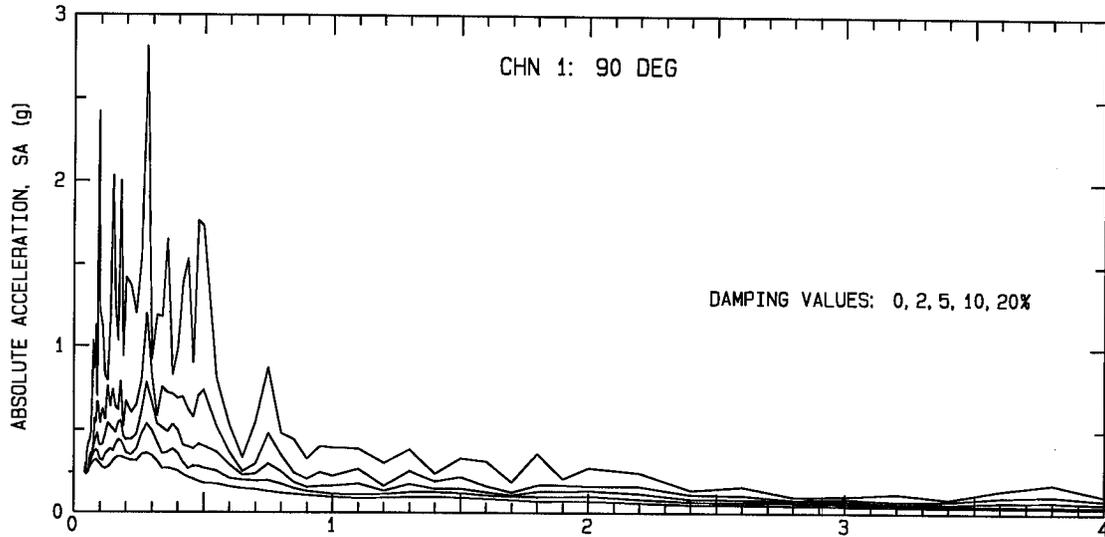
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - BALDWIN HILLS
CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
24157-S1687-94019.02 030294.0717-QN94A157

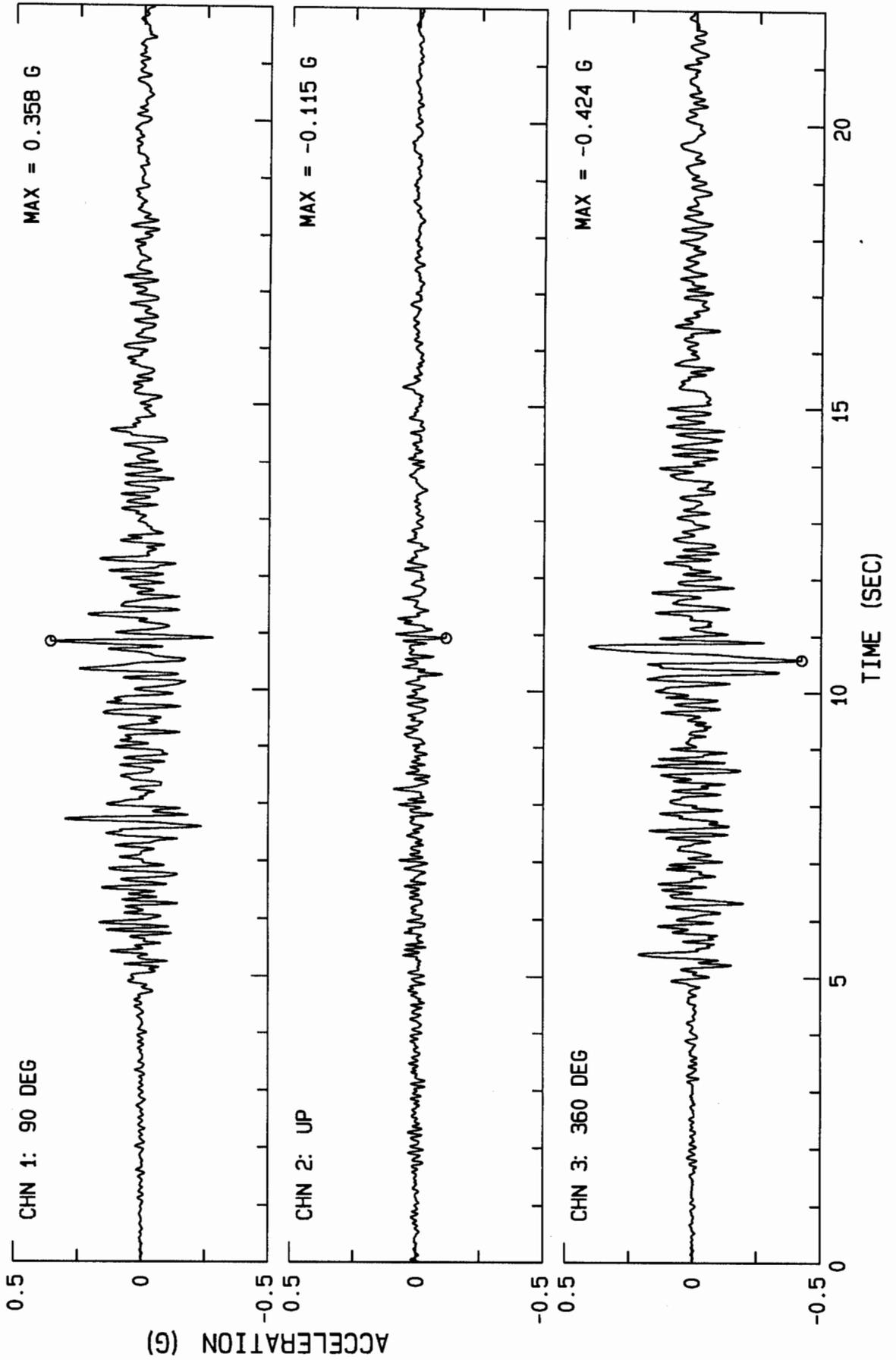
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - BALDWIN HILLS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
24157-S1687-94019.02 030294.0717-QN94A157

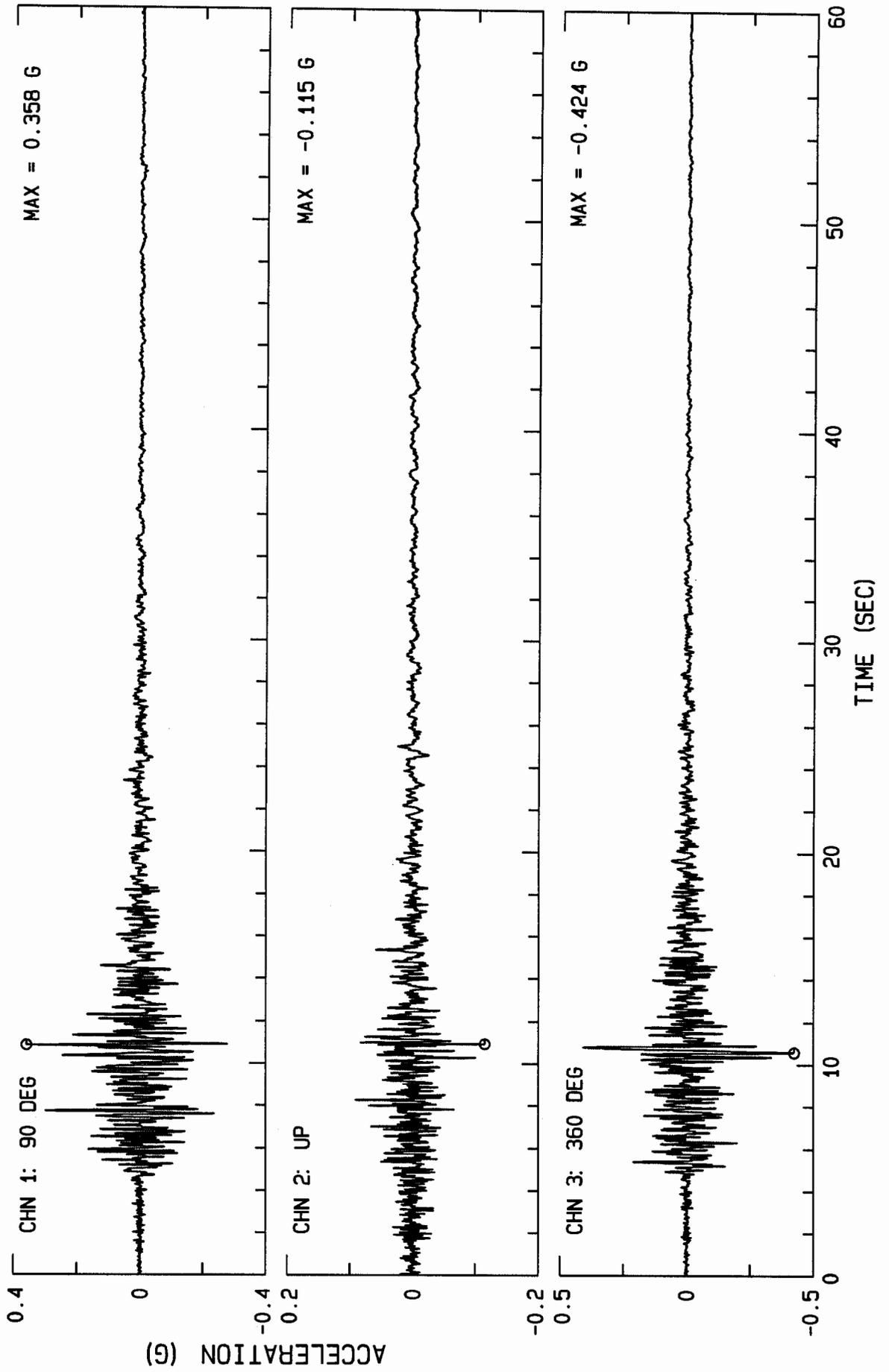


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - OREGON PARK
UNCORRECTED ACCELEROGRAM 24400-S1606-94024.02 020394.1102-QN94A400

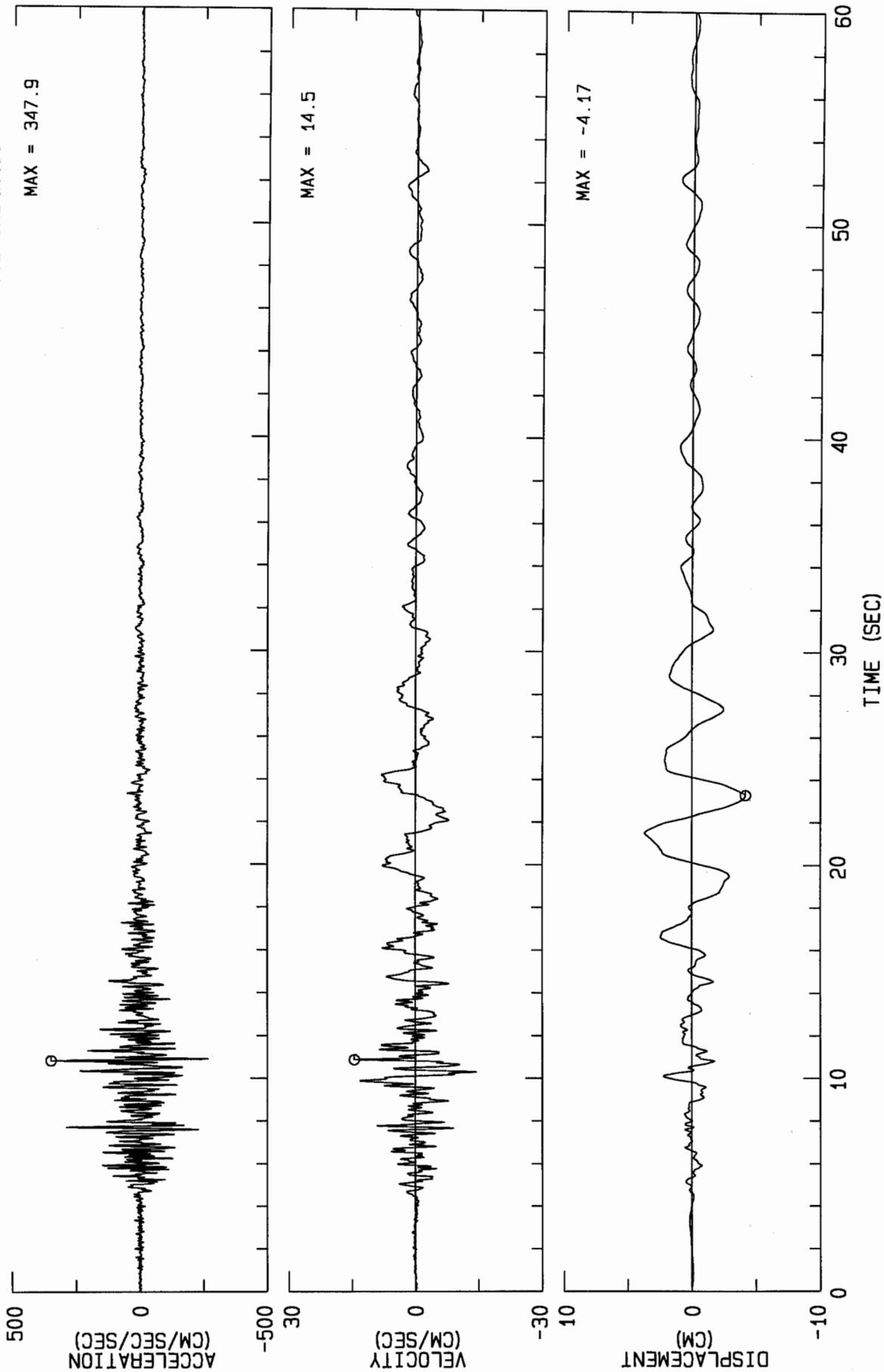


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - OREGON PARK

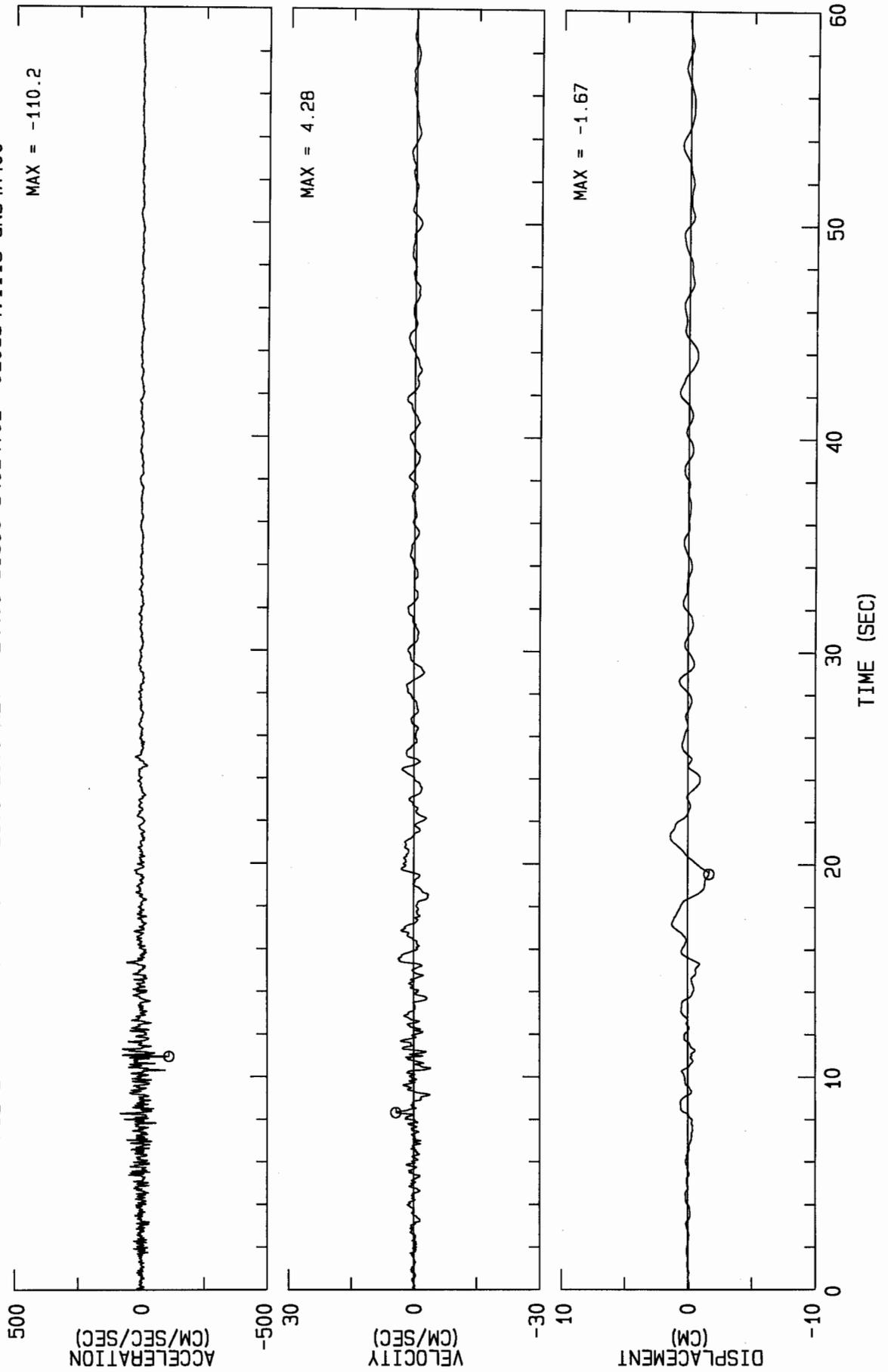
UNCORRECTED ACCELEROGRAM 24400-S1606-94024.02 020394.1102-GN94A400



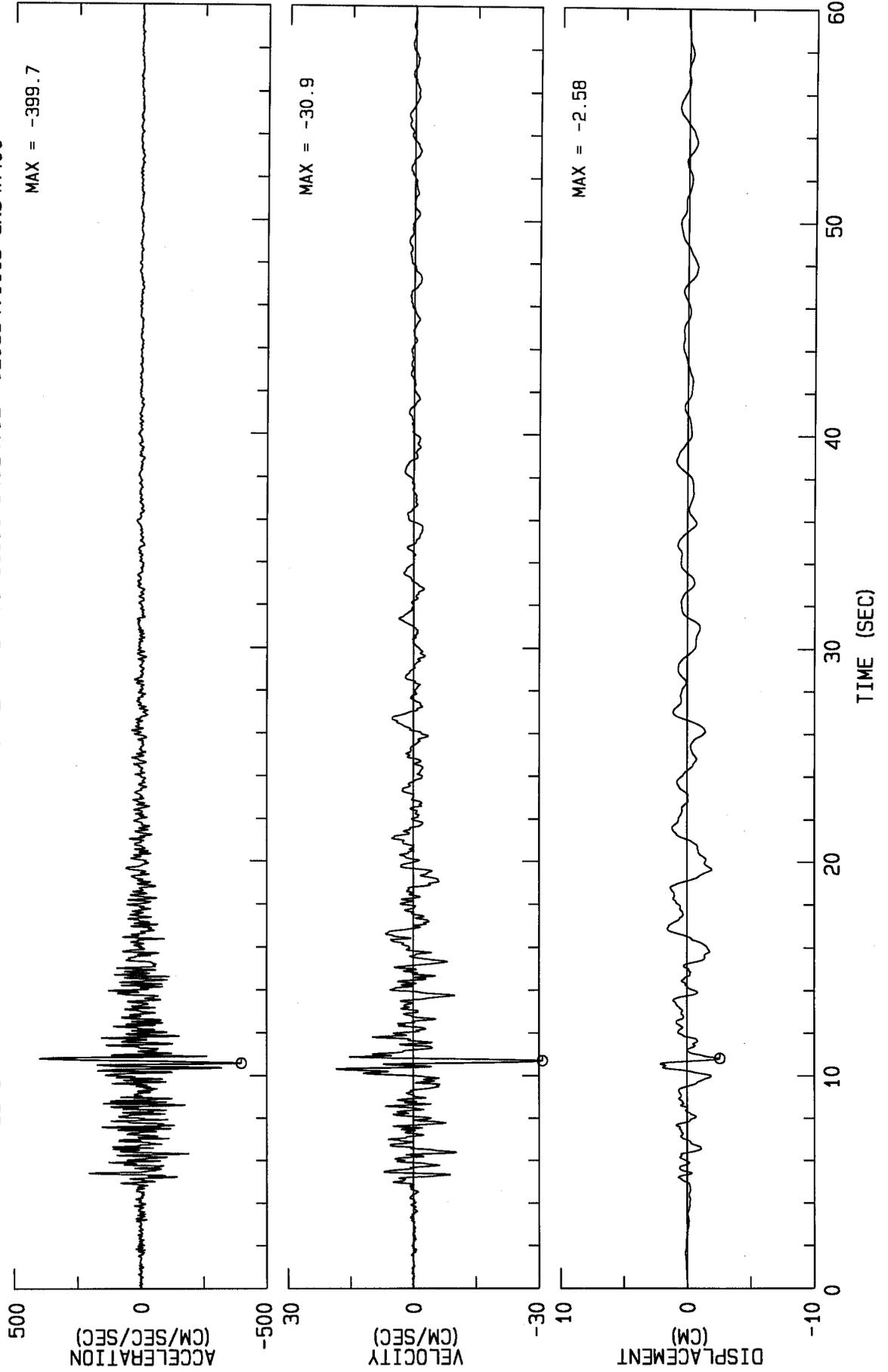
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - OREGON PARK CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24400-S1606-94024.02 020394.1115-QN94A400



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - OBREGON PARK CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24400-S1606-94024.02 020394.1115-QN94A400



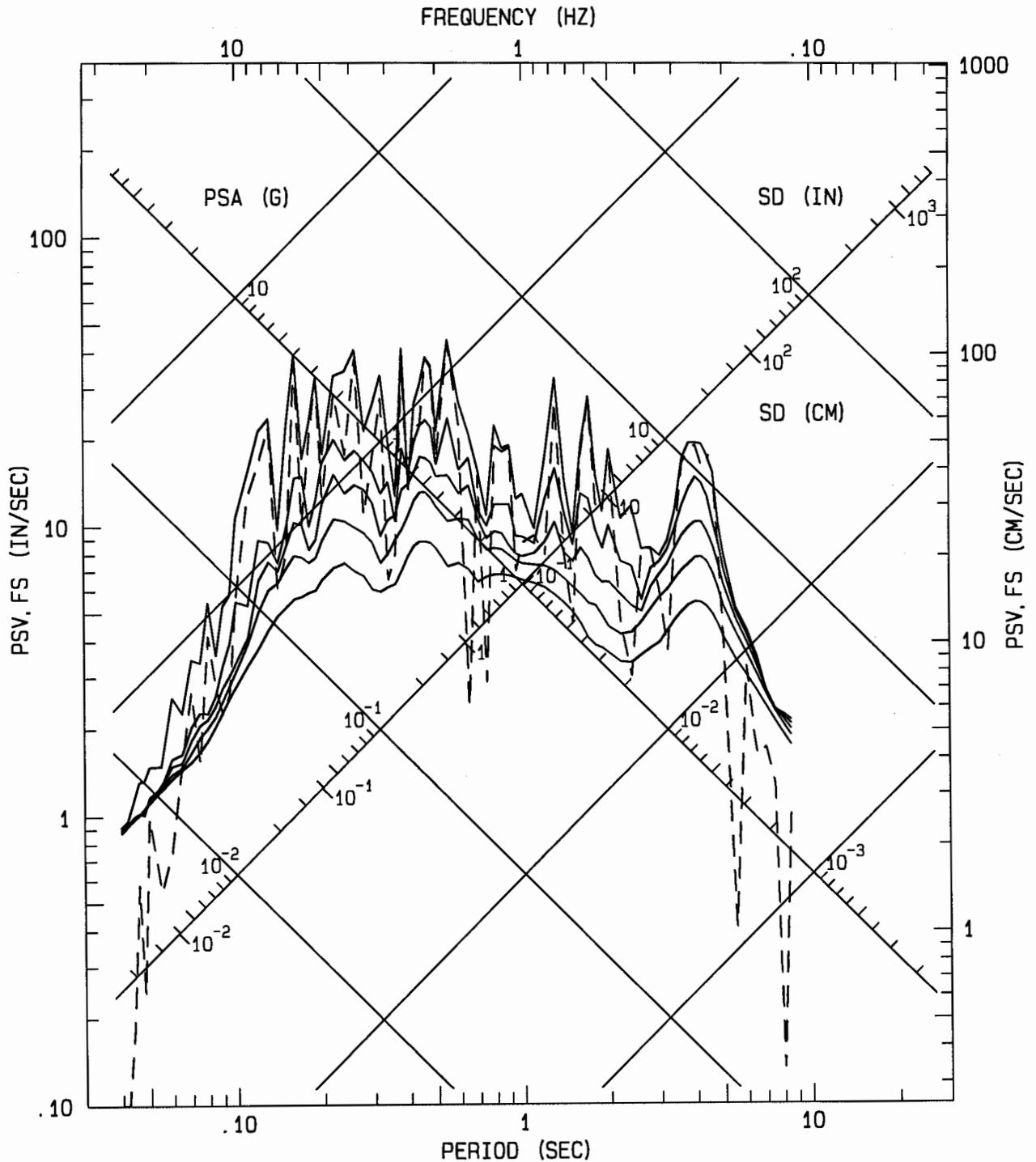
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - OREGON PARK CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 24400-S1606-94024.02 020394.1115-QN94A400



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
 LOS ANGELES - OBREGON PARK
 CHN 1: 90 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24400-S1606-94024.02 030294.0703-QN94A400

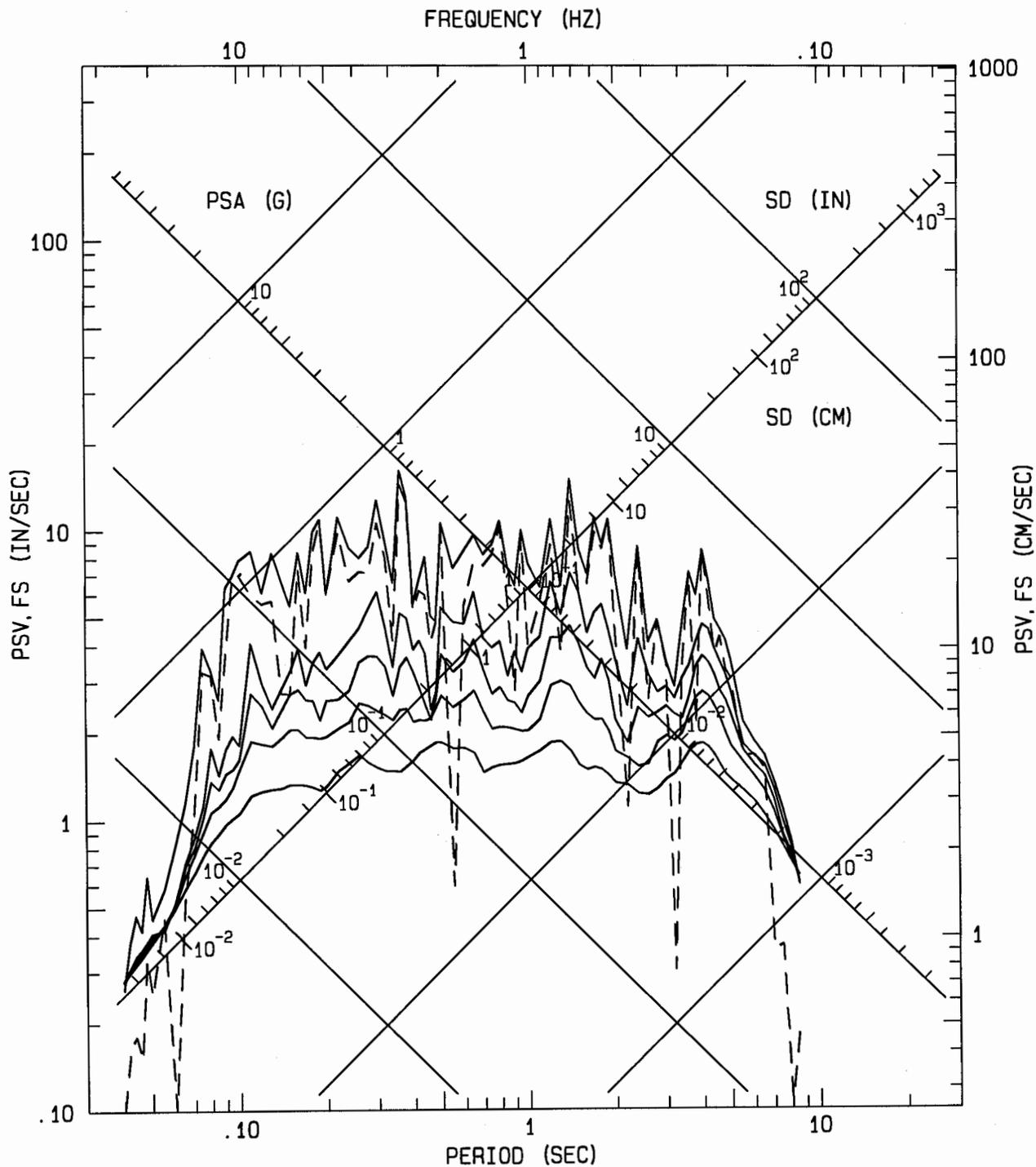
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - OBREGON PARK
 CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24400-S1606-94024.02 030294.0703-QN94A400

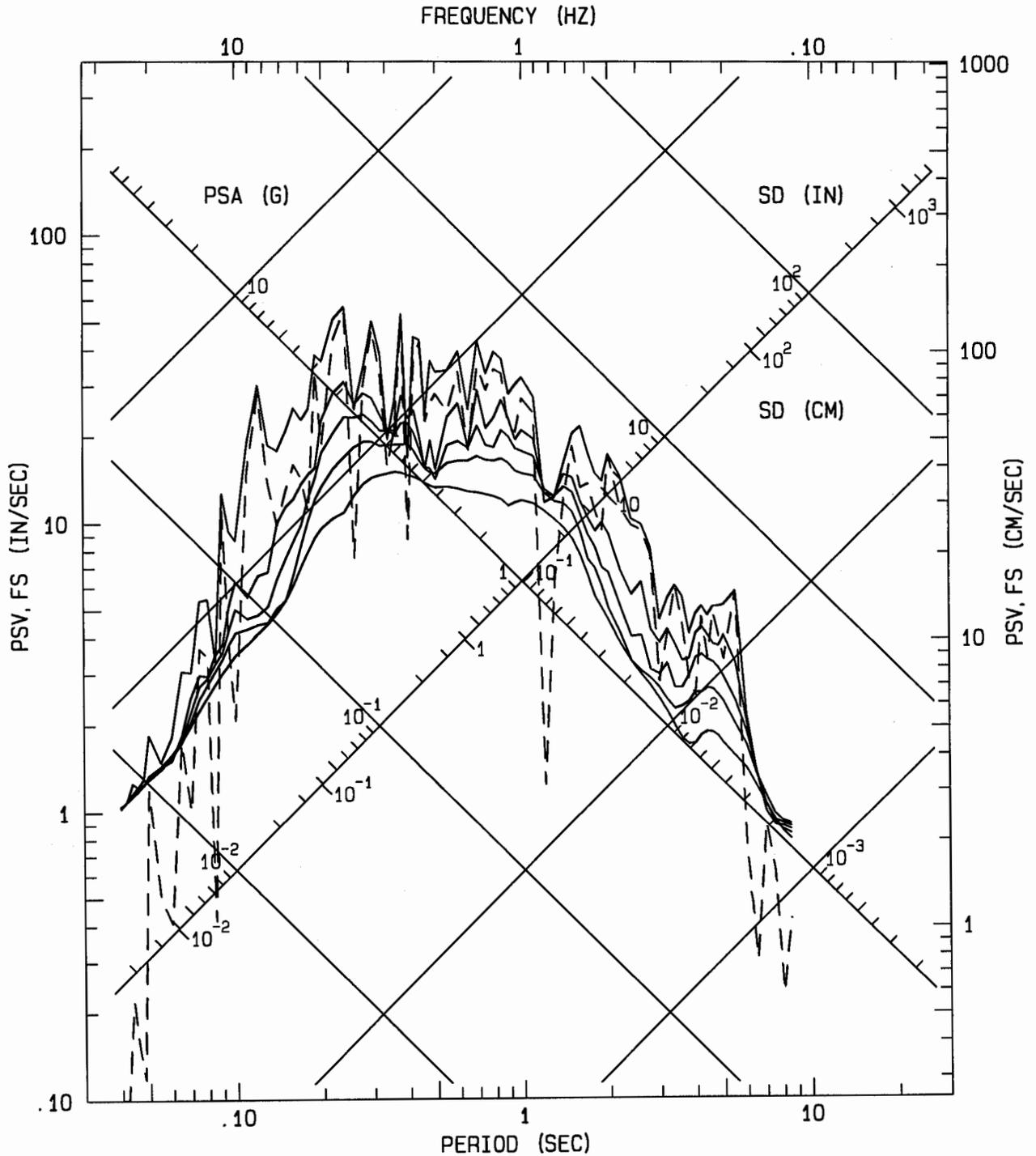
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



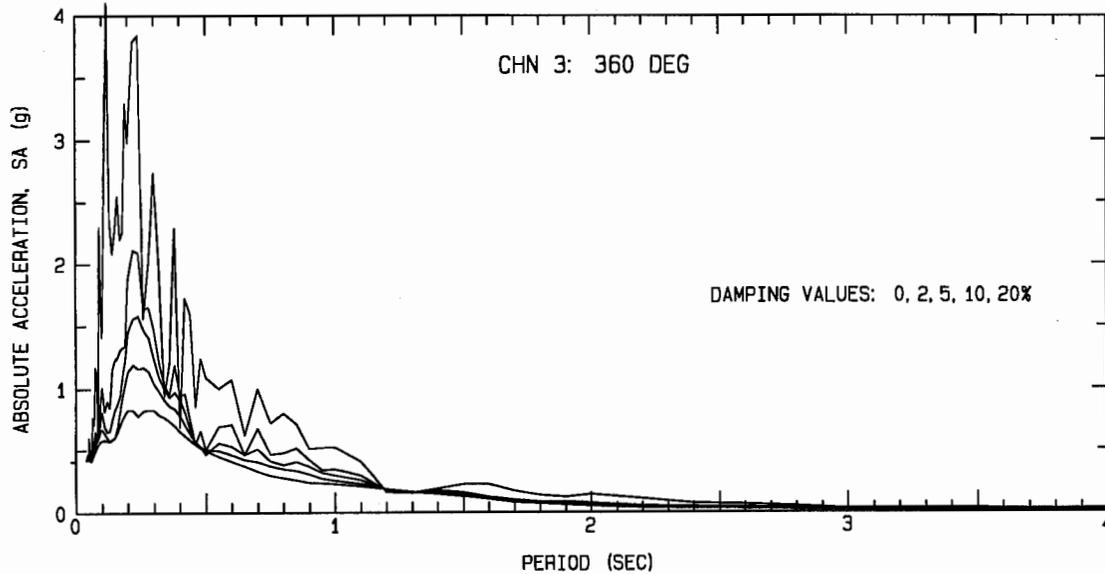
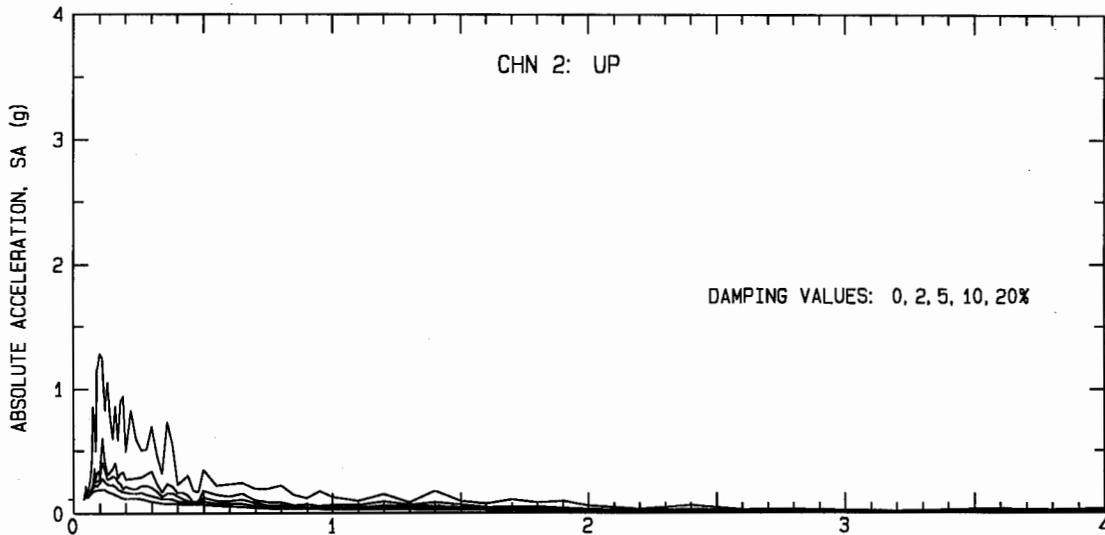
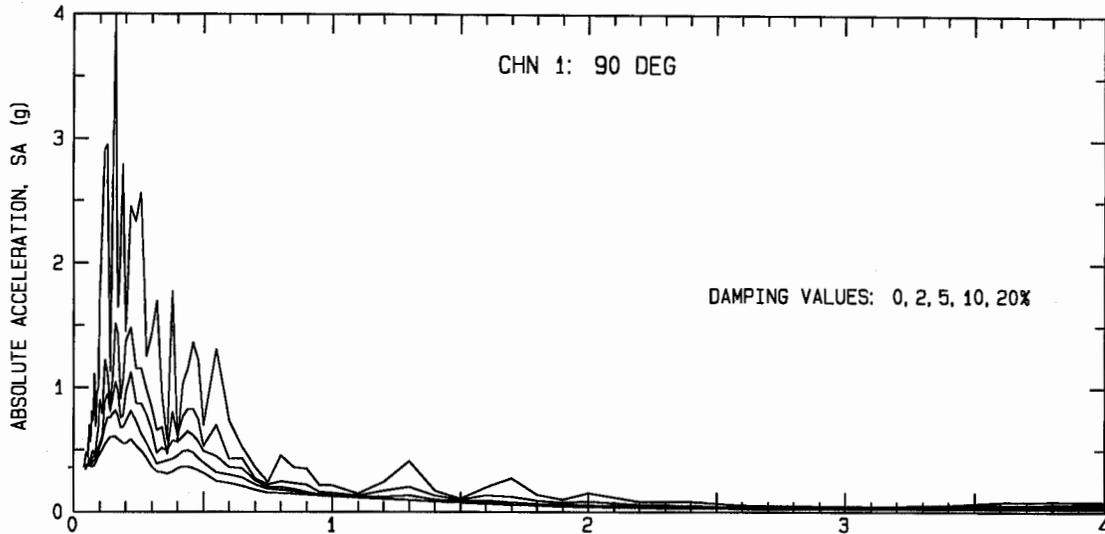
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 LOS ANGELES - OBREGON PARK
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 24400-S1606-94024.02 030294.0703-QN94A400

— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%

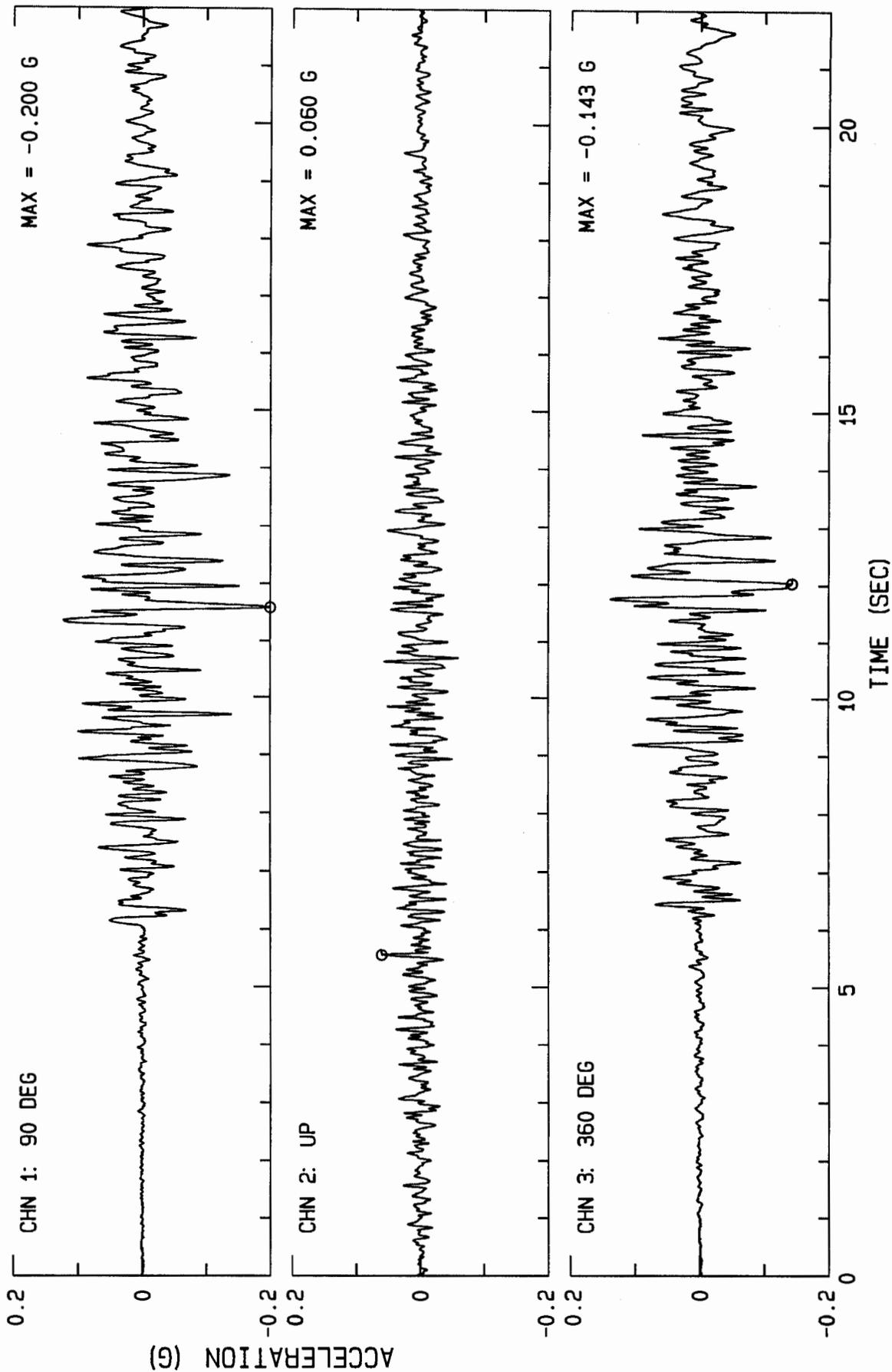


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - OBREGON PARK
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
24400-S1606-94024.02 030294.0703-QN94A400

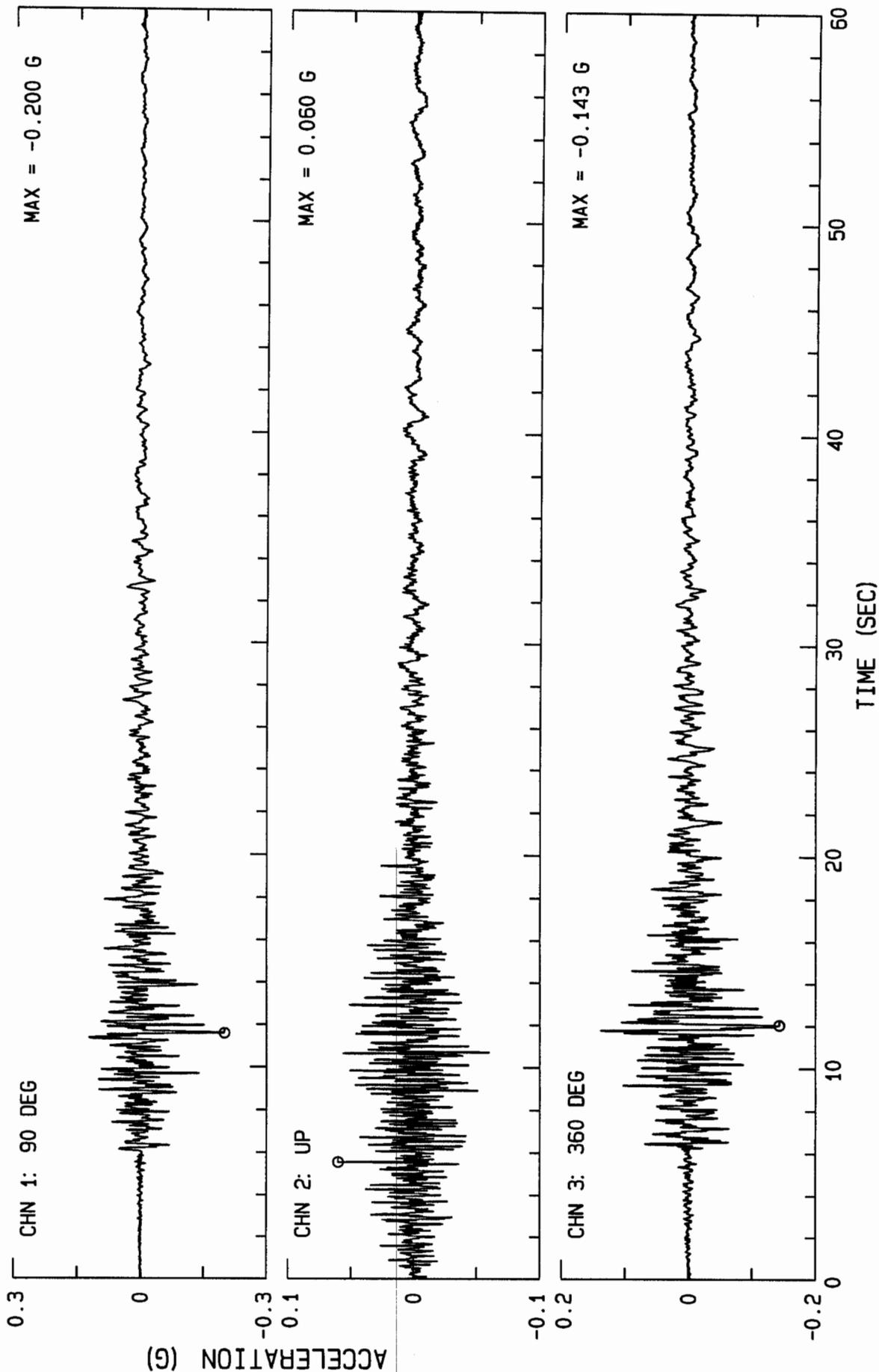


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - 116TH ST. SCHOOL

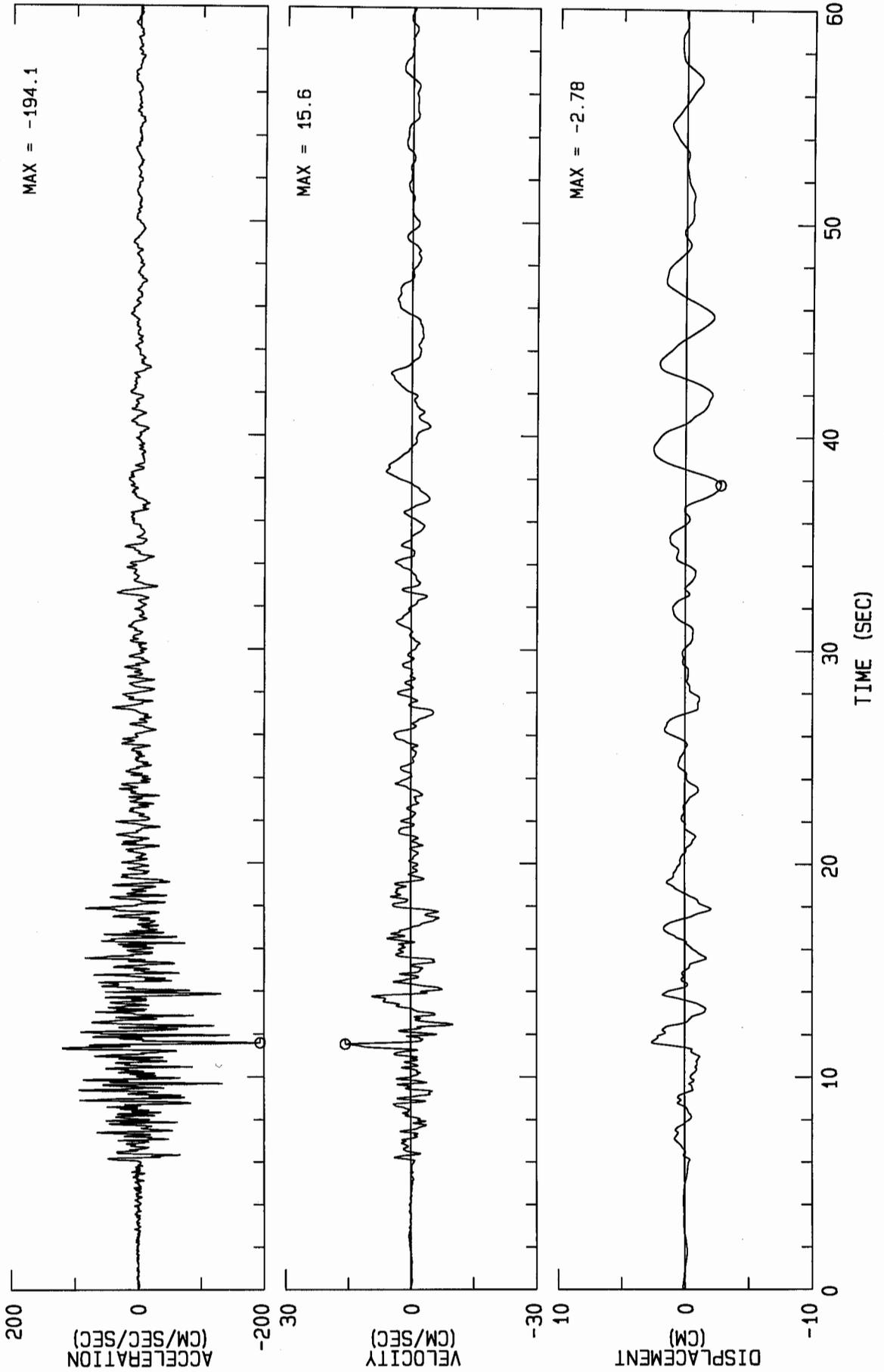
UNCORRECTED ACCELEROGRAM 14403-S3492-94021.02 020894.0905-QN94A403



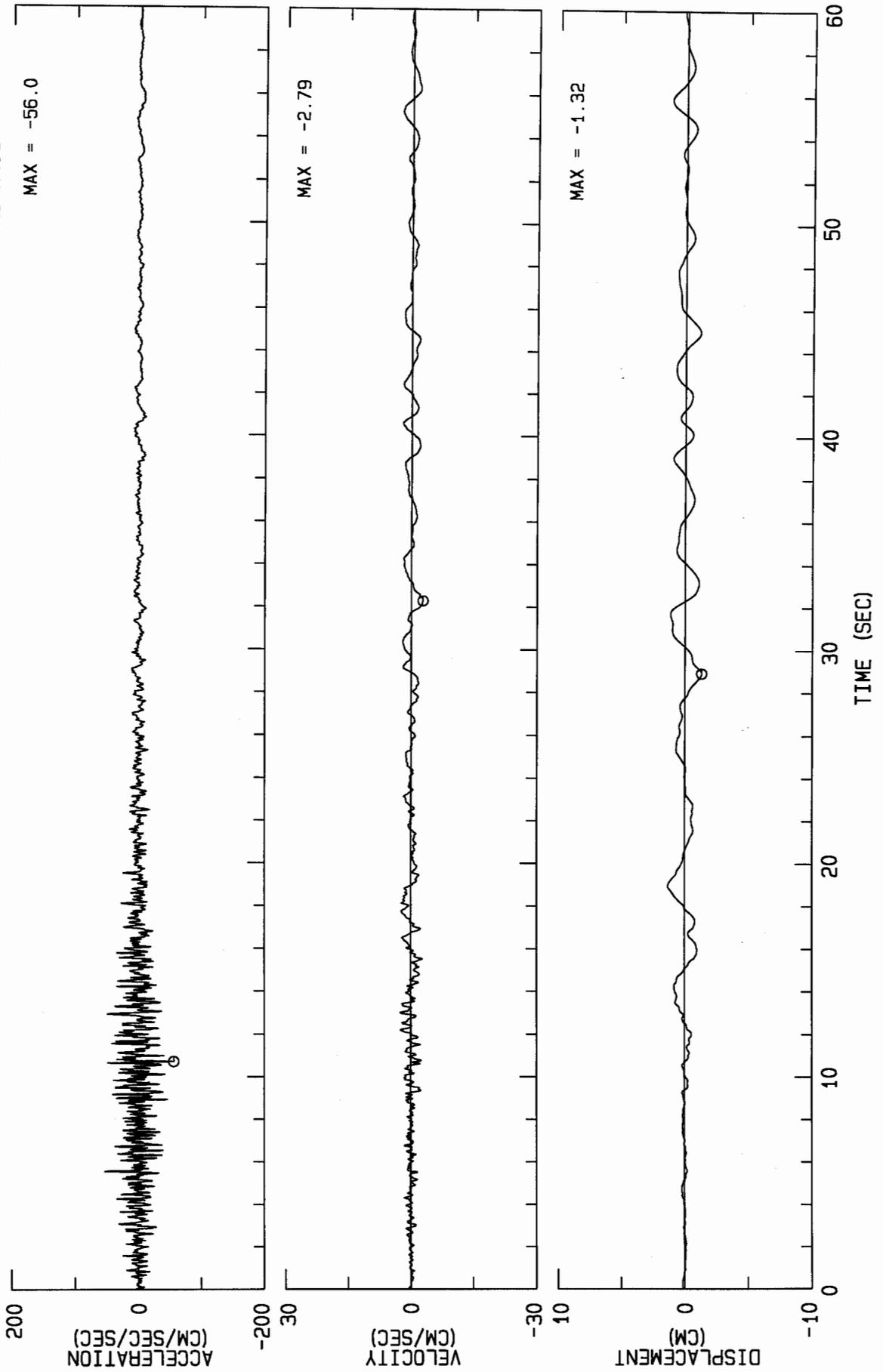
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - 116TH ST. SCHOOL
UNCORRECTED ACCELEROGRAM 14403-S3492-94021.02 020894.0905-QN94A403



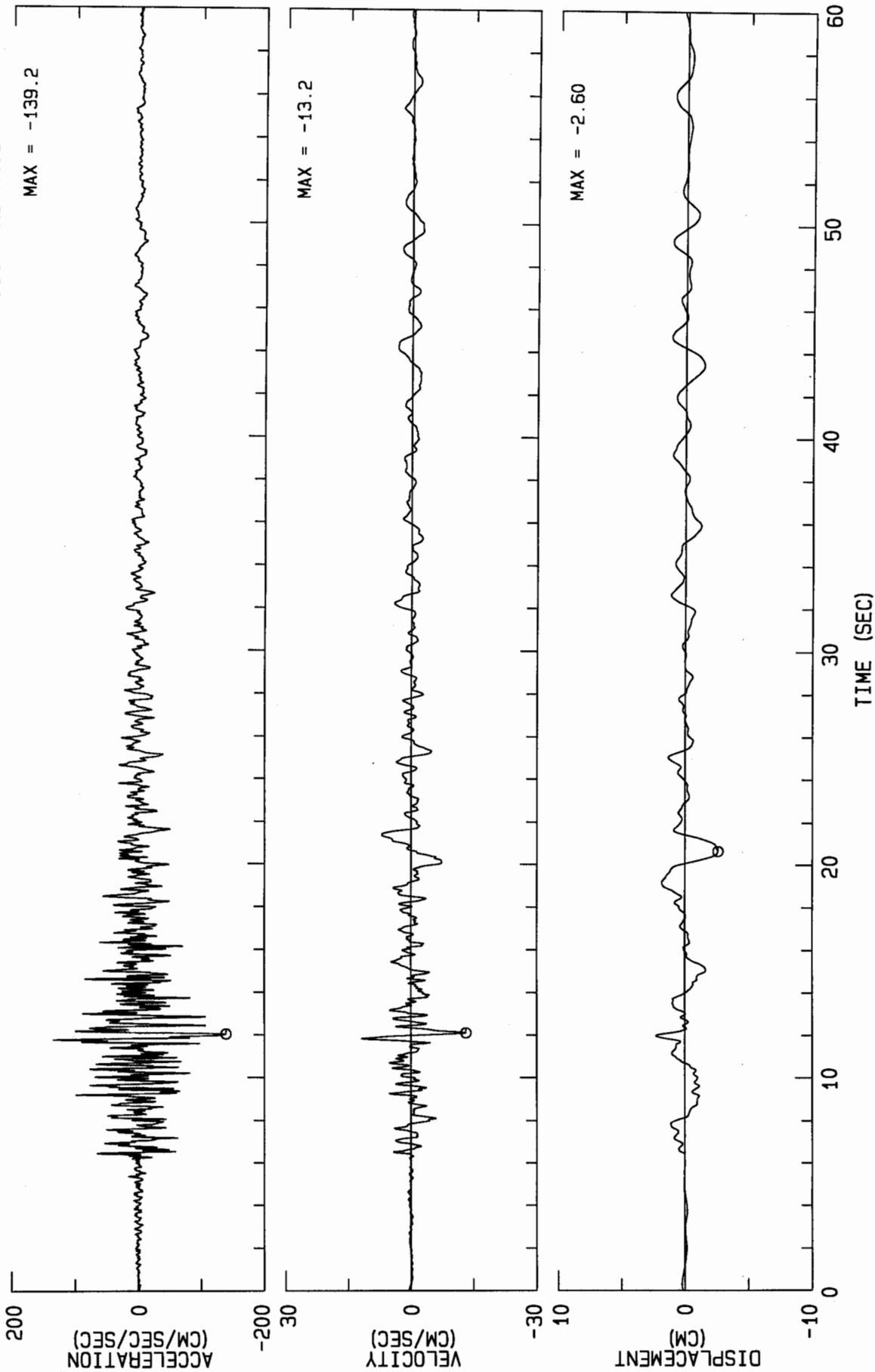
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - 116TH ST. SCHOOL CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 14403-S3492-94021.02 020894.0925-QN94A403



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - 116TH ST. SCHOOL CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 14403-S3492-94021.02 020894.0925-QN94A403



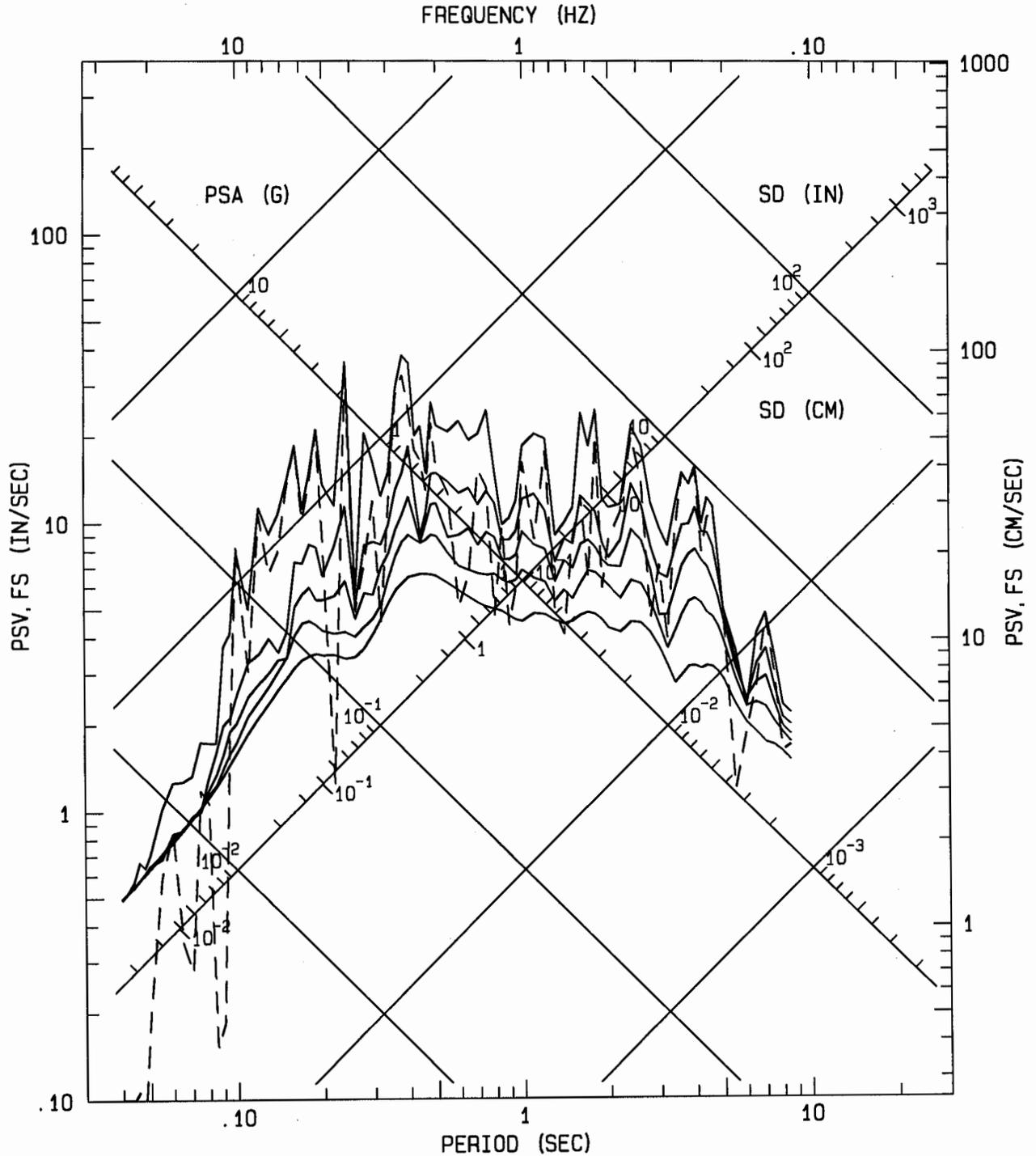
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - 116TH ST. SCHOOL CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .08-.16 TO 23.0-25.0 HZ. 14403-S3492-94021.02 020894.0925-QN94A403



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
LOS ANGELES - 116TH ST. SCHOOL
CHN 1: 90 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
14403-S3492-94021.02 030294.0651-GN94A403

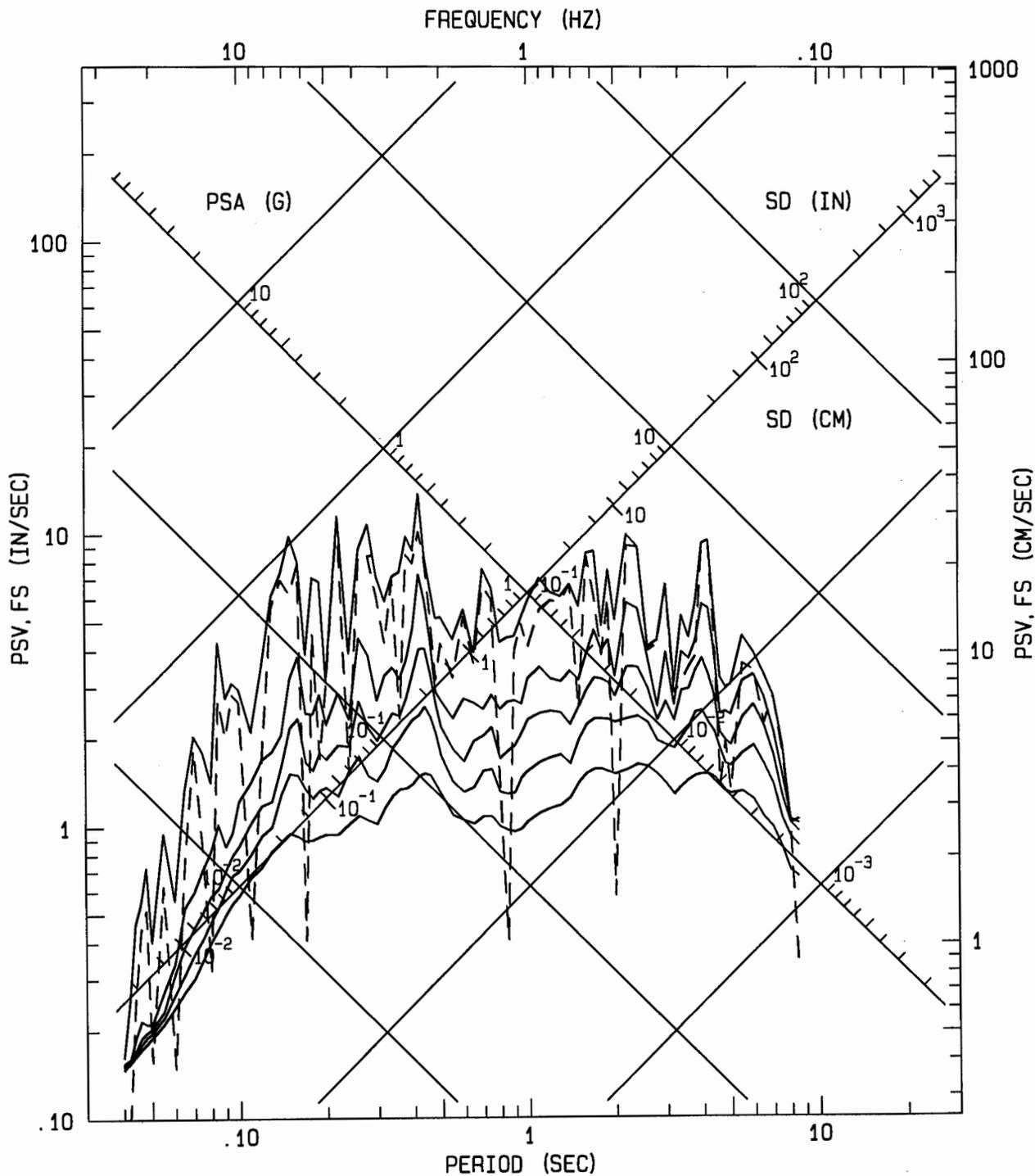
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
 LOS ANGELES - 116TH ST. SCHOOL
 CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 14403-S3492-94021.02 030294.0651-QN94A403

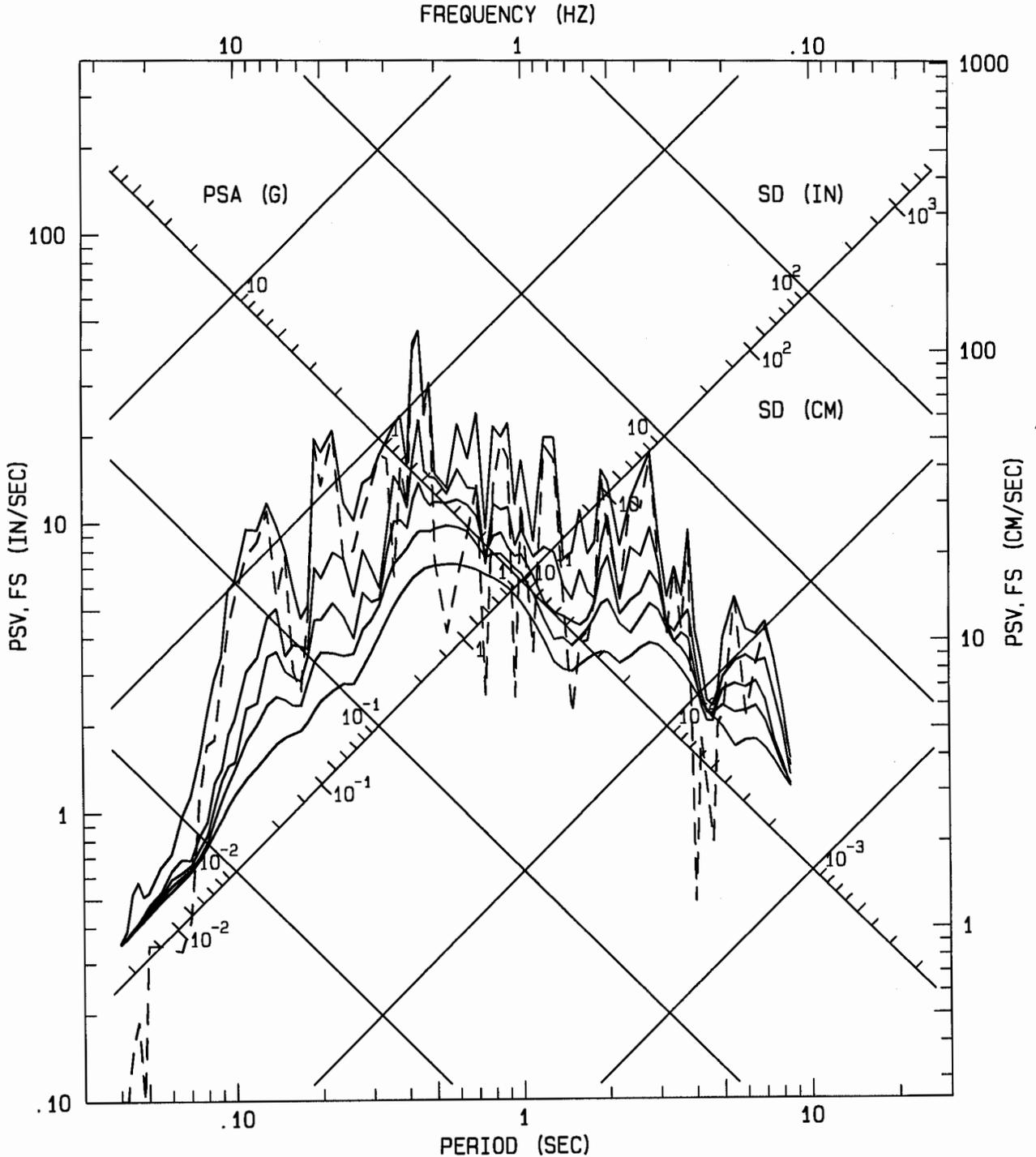
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



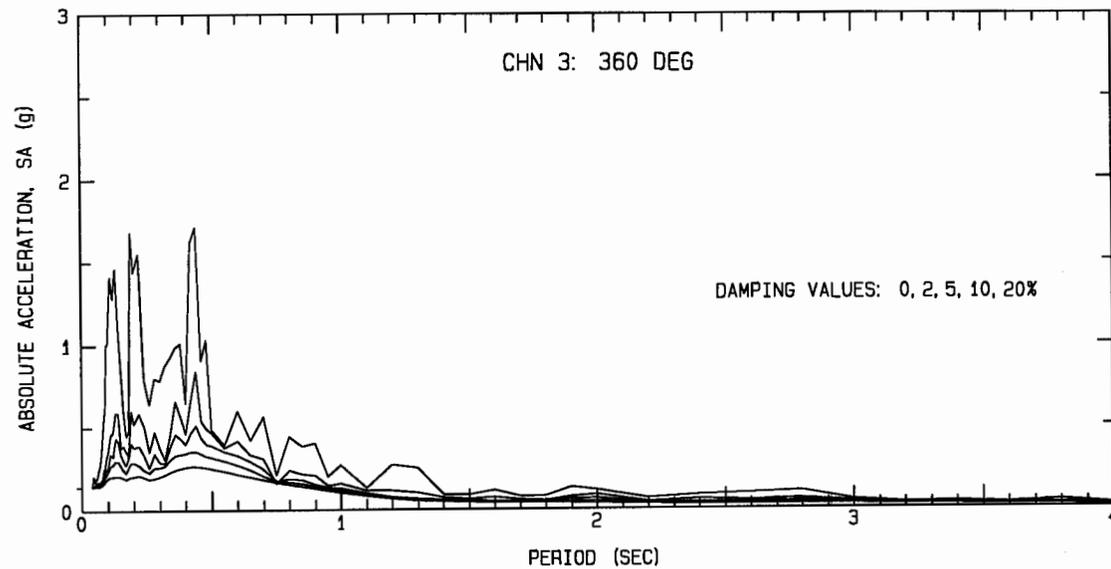
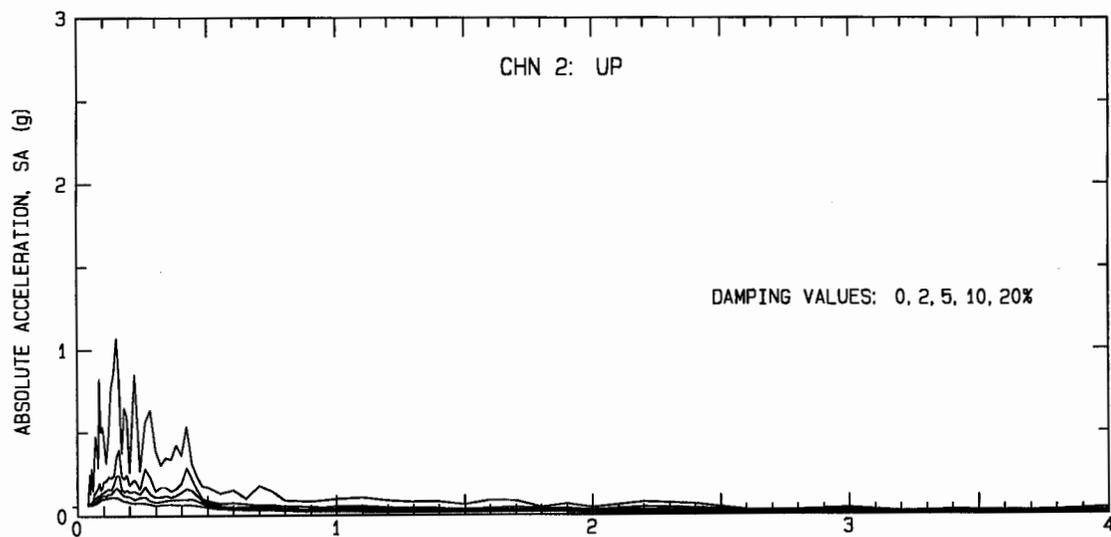
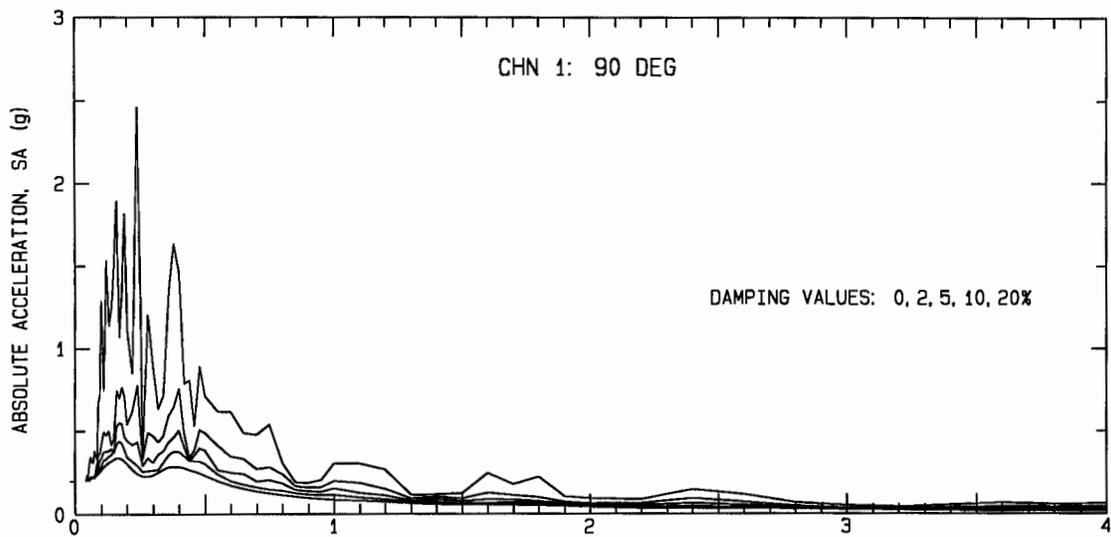
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
 LOS ANGELES - 116TH ST. SCHOOL
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
 14403-S3492-94021.02 030294.0651-QN94A403

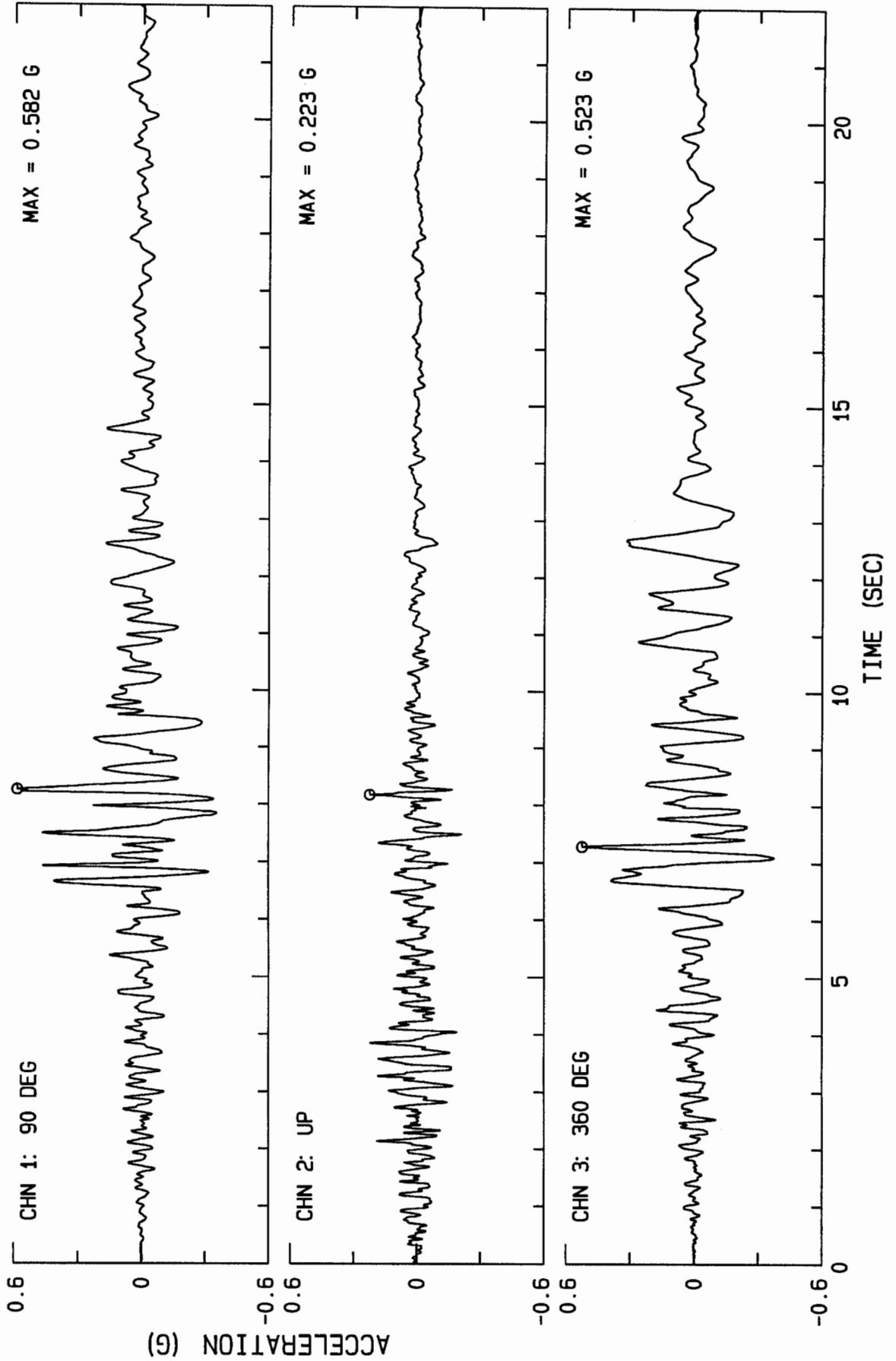
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



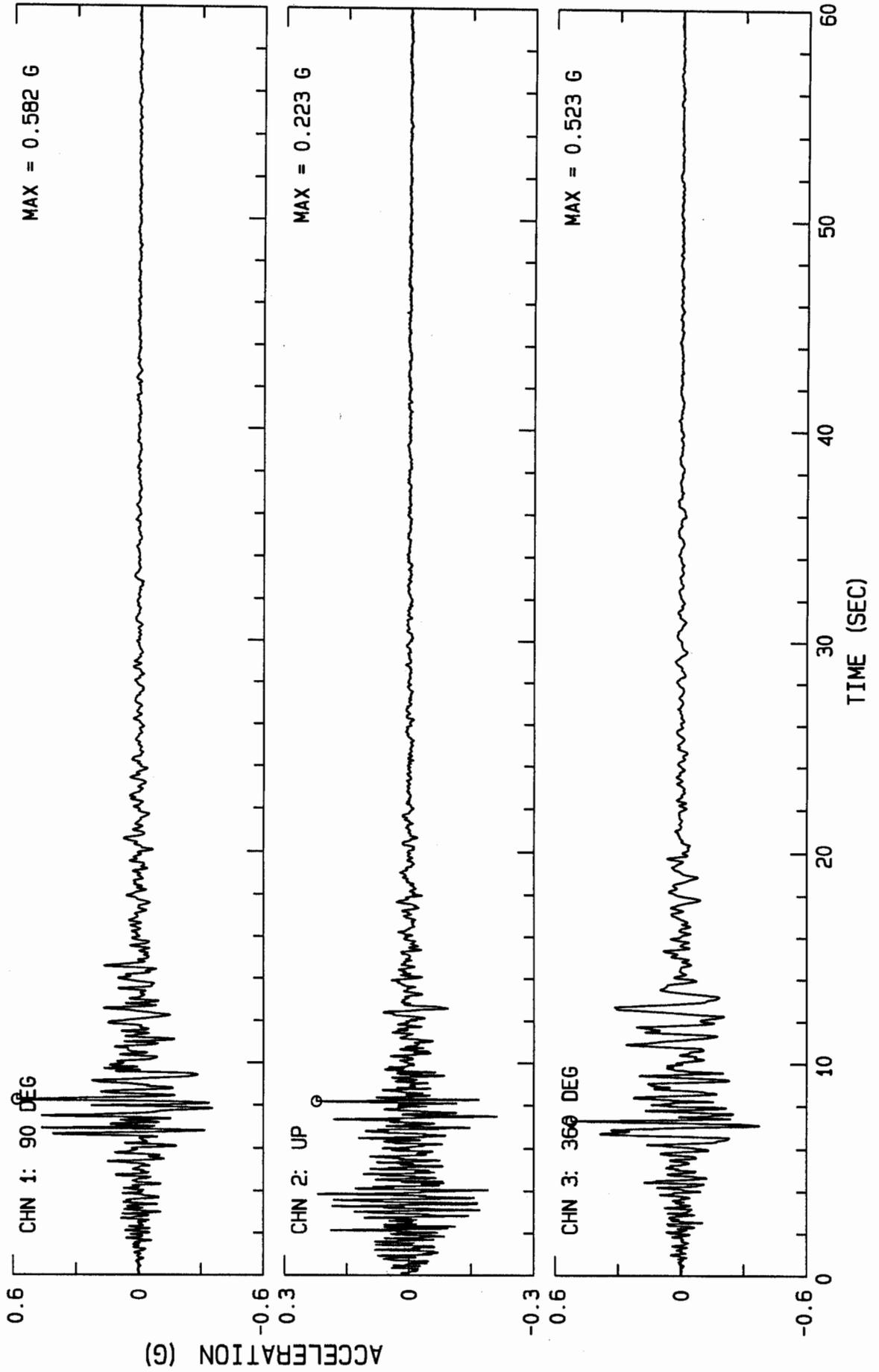
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - 116TH ST. SCHOOL
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 23.0-25.0 HZ.
14403-S3492-94021.02 030294.0651-QN94A403



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
CASTAIC - OLD RIDGE ROUTE
UNCORRECTED ACCELEROGRAM 24278-S1572-94024.02 020994.1630-QN94A278



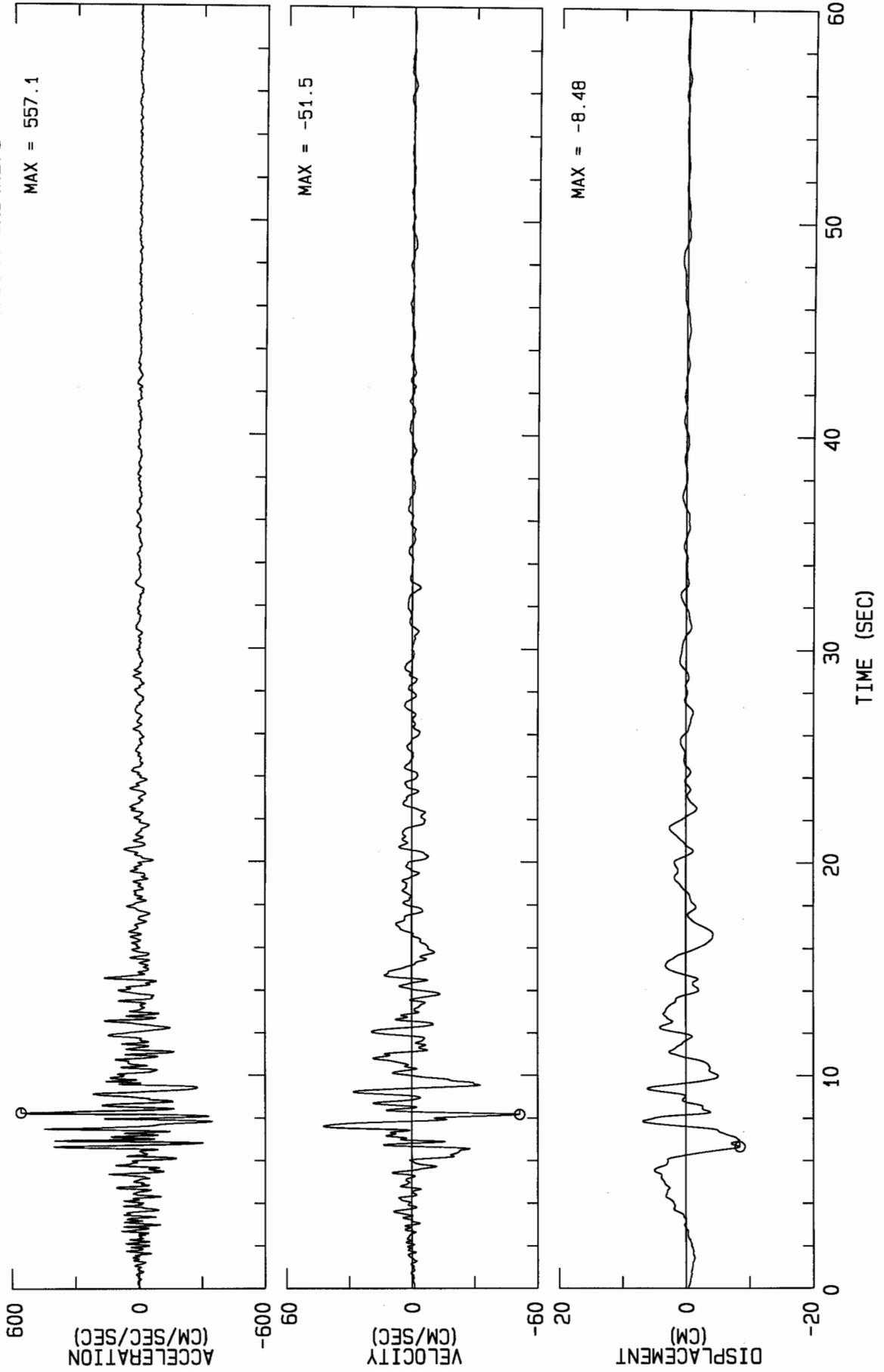
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
CASTAIC - OLD RIDGE ROUTE
UNCORRECTED ACCELEROGRAM 24278-S1572-94024.02 020994.1630-QN94A278



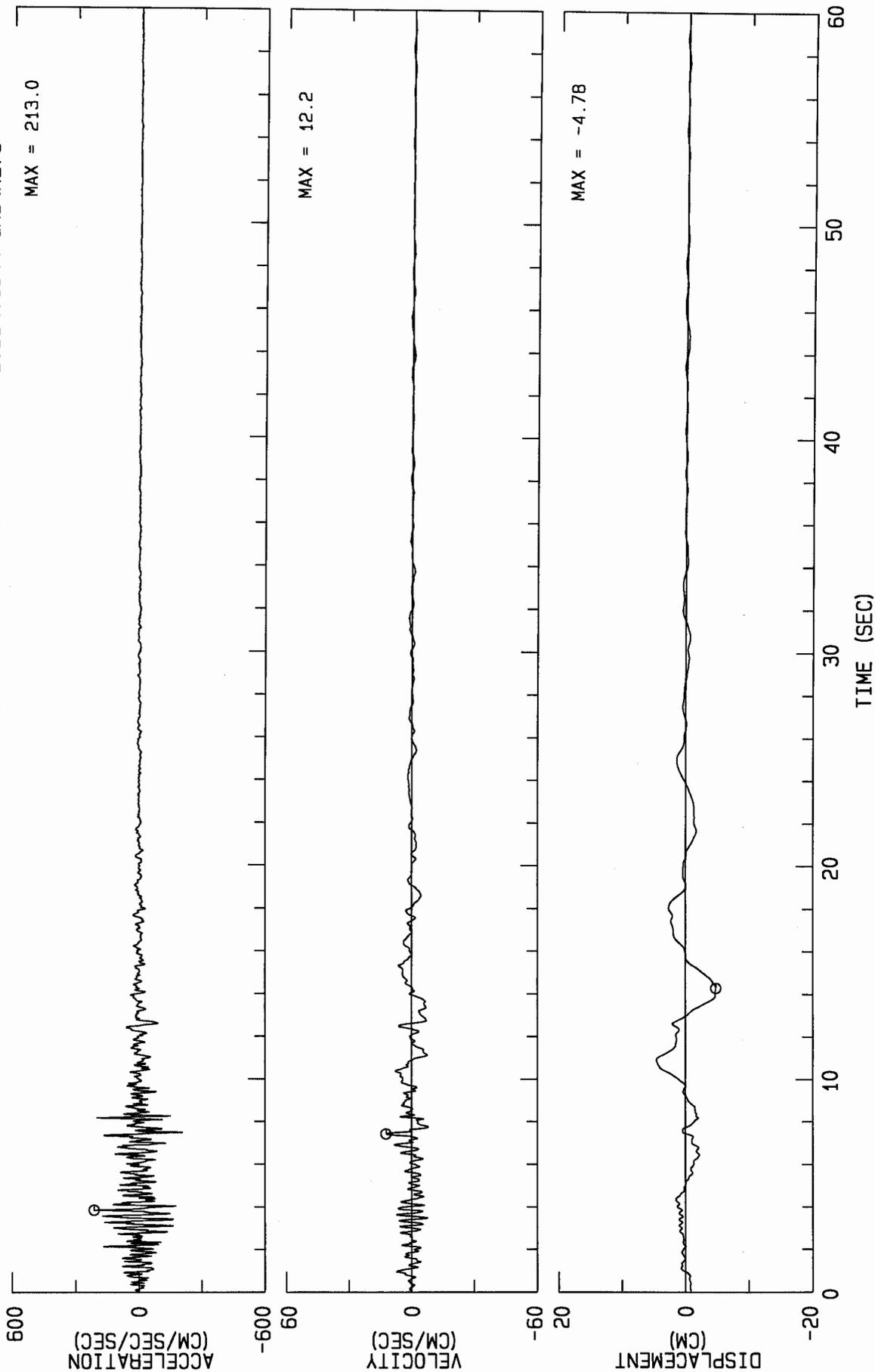
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

CASTAIC - OLD RIDGE ROUTE CHN 1: 90 DEG

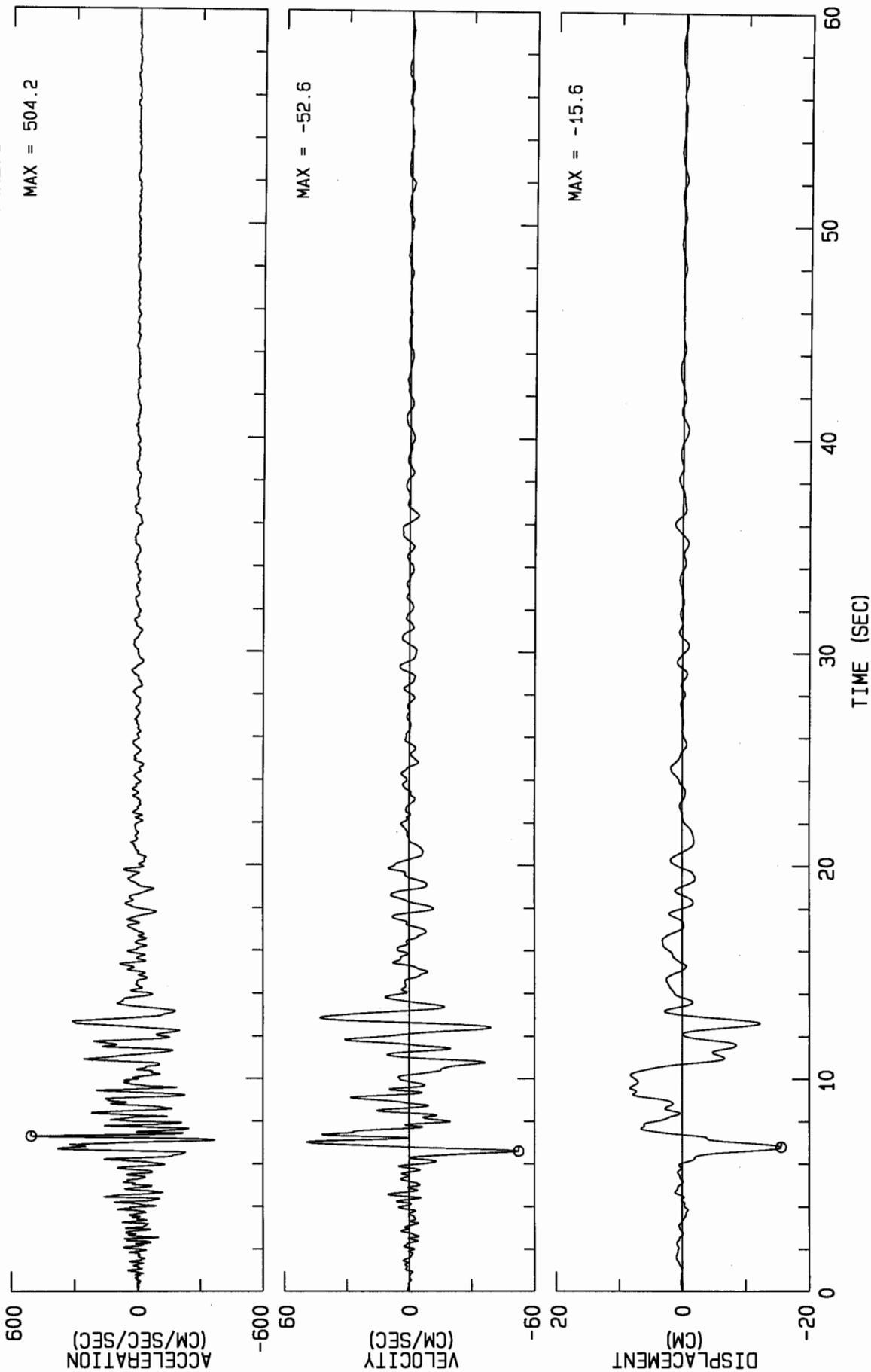
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24278-S1572-94024.02 020994.1644-QN94A278



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
CASTAIC - OLD RIDGE ROUTE CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24278-S1572-94024.02 020994.1644-QN94A278



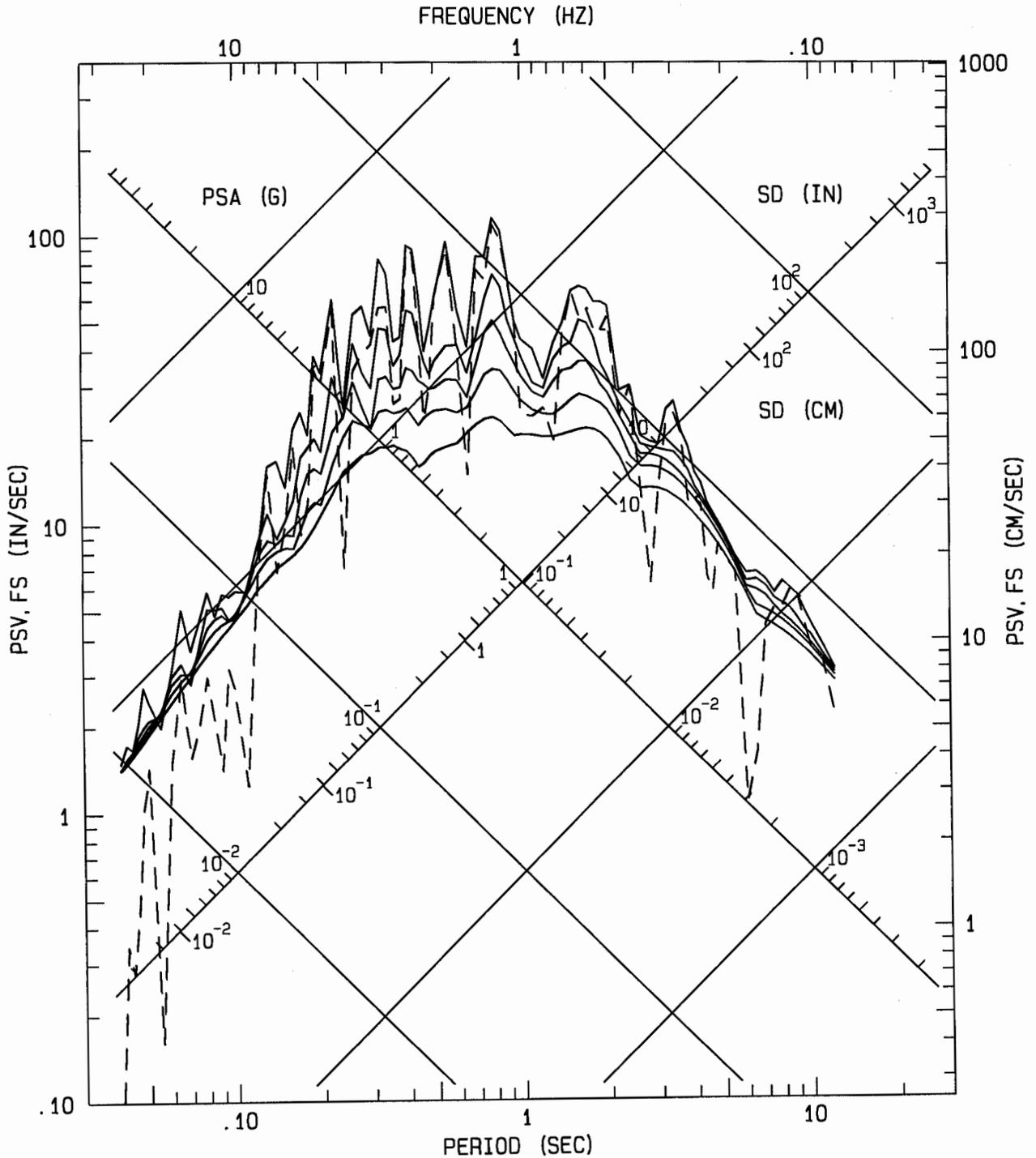
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
CASTAIC - OLD RIDGE ROUTE CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24278-S1572-94024.02 020994.1644-QN94A278



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
 CASTAIC - OLD RIDGE ROUTE
 CHN 1: 90 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 23.0-25.0 HZ.
 24278-S1572-94024.02 030294.0659-QN94A278

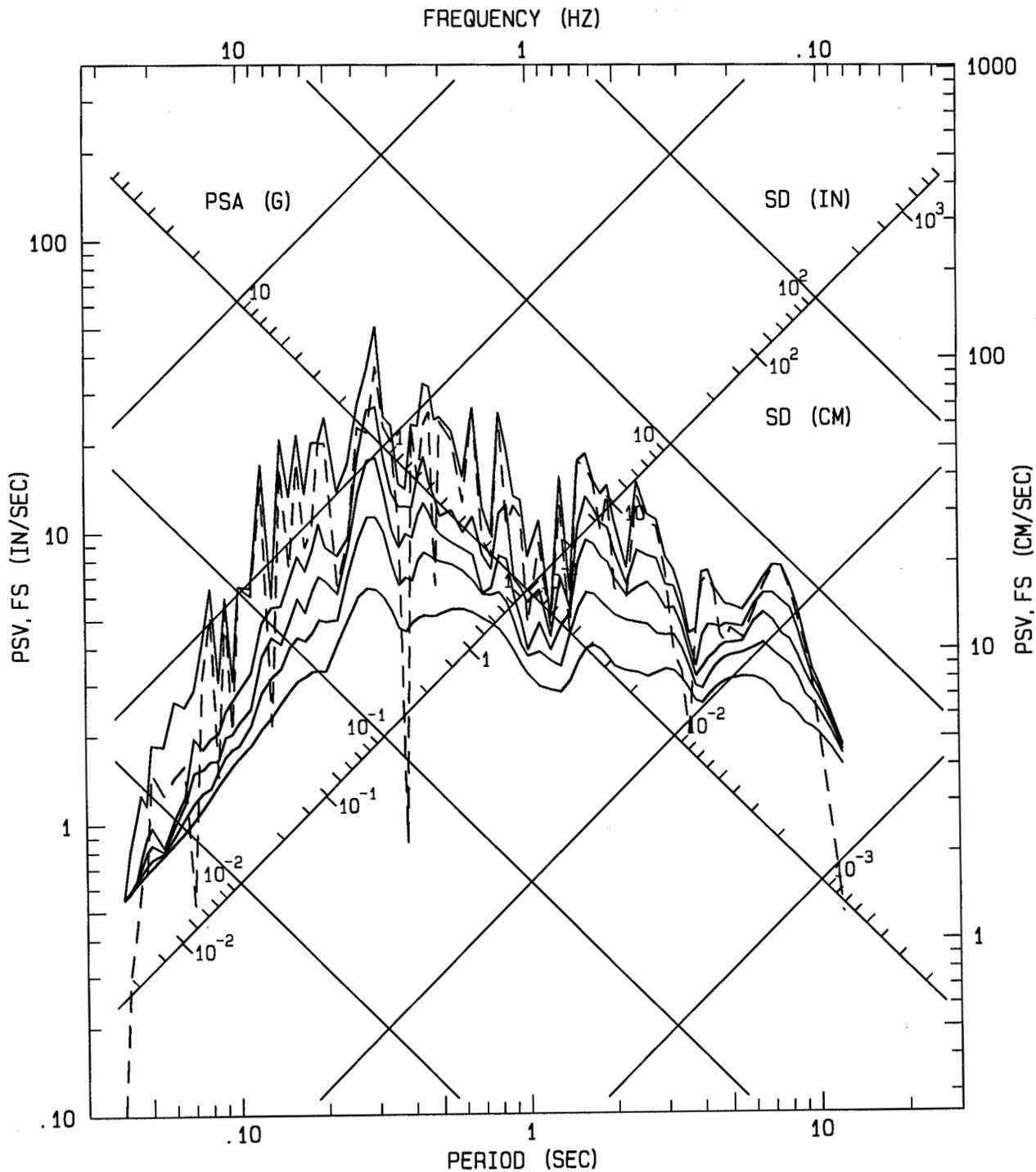
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 CASTAIC - OLD RIDGE ROUTE
 CHN 2: UP

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 23.0-25.0 HZ.
 24278-S1572-94024.02 030294.0659-QN94A278

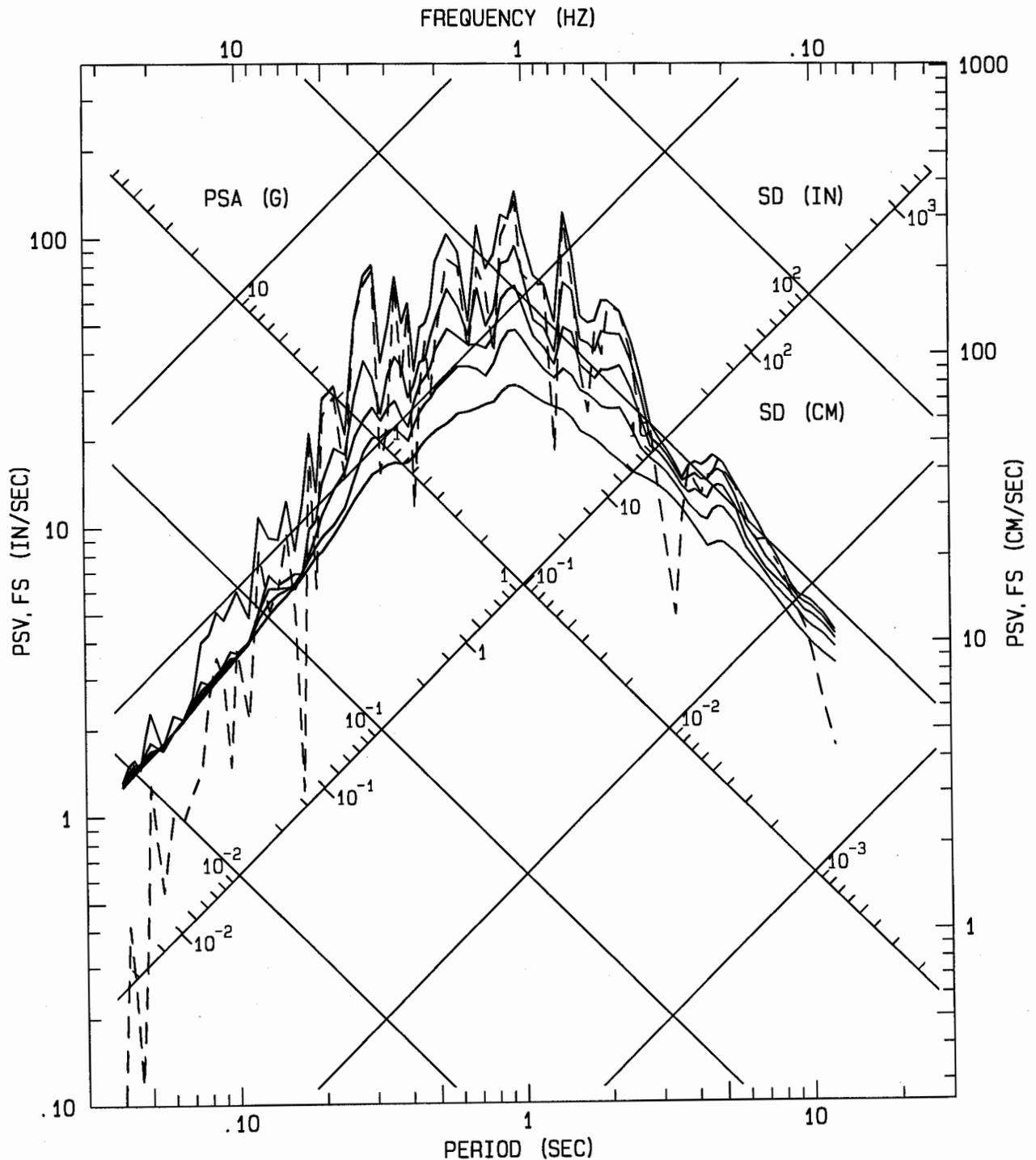
— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
 CASTAIC - OLD RIDGE ROUTE
 CHN 3: 360 DEG

ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 23.0-25.0 HZ.
 24278-S1572-94024.02 030294.0659-QN94A278

— RESPONSE SPECTRA: PSV, PSA & SD - - FOURIER AMPLITUDE SPECTRUM: FS
 DAMPING VALUES: 0, 2, 5, 10, 20%



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04: 31 PST
CASTAIC - OLD RIDGE ROUTE
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 23.0-25.0 HZ.
24278-S1572-94024.02 030294.0659-QN94A278

